THIS WEEK'S National Petroleum NEWS

Index to Coming Meetings

National Oil Scouts Association of America, San Antonio, Tex., May 19, 20.

Natural Gasoline Association of America, Mayo Hotel, Tulsa, May 20, 21, 22.

Mid-Continent District, American Petroleum Institute, Division of Production, Mayo Hotel, Tulsa, May 23 and 24.

Society of Automotive Engineers, French Lick Springs, Ind., May 25 to 29.

Conference on Grease Equipment, American Petroleum Institute and *Conference Committee on Weights and Tolerances, Washington, D. C.*, June 2.

West Virginia Oil Marketers Association, Daniel Boone Hotel, Charleston, W. Va., June 12, 13.

American Society for Testing Materials, Atlantic City, N. J. June 23 to 27.

North American Gasoline Tax Conference, King Edward Hotel, Toronto, Ont.. Sept. 2. 3. 4.

American Chemical Society, Hotel Gibson, Cincinnati, O., Sept. 8 to 12.

National Petroleum Association, Hotel Traymore, Atlantic City, N. J., Sept. 17, 18, 19.

National Safety Council, Petroleum Section, Pittsburgh, Pa., Sept. 29 to Oct. 4.

Big Four State Jobbers Convention, (Missouri, Iowa, Kansas and Nebraska) Kansas City, Mo., Oct. 14, 15, 16.

NATIONAL PETROLEUM NEWS

Vol. 22 No. 20

Published by

The National Petroleum Publishing Co.
1213 W. Third St., Cleveland, O.

Tel. CHerry 7672

Branch Offices:

Tulsa, 904 World Bldg., Tel. 3-7132.

New York, 342 Madison Ave., Tel. Vanderbilt 3951.

Houston, 2020 Gulf Bldg., Tel. Fairfax 6286.

Chicago, 35 E. Wacker Drive, Tel. State 4141.

Subscription rate $3.50 per year, U. S., Mexico and Canada; $5 Foreign countries. Current copies 10 cents; for back issues more than two months old 25 cents per copy.

All contents copyrighted, 1929. Trade Mark Registered U. S. Patent Office.

Member Audit Bureau of Circulations and Associated Business Papers.

General

Overproduction of Crude Becomes Problem in Pennsylvania 30
State Gasoline Tax Exempts Kentucky Oil Men from New Sales Tax 31
Review of Late Production News 32
A.P.I. Report of Refinery Operations Week Ended May 10 33
Gas and Coal Reserves in Relation to Pipe Lines and Markets—*by L. G. Huntley and S. L. Mason* 34
Southwestern Railroads Not to Fight Gasoline Pipe Line 36
Cooling with Gas, as Well as Heating, Urged as Subject for Development 37
Transportation Men Fear Increases in Truck Sizes Will Cause Trouble 39
Twenty Oil Companies Win Navy Fuel Oil Contracts 41
New Texas Field, Producing From Lava is Promotion Paradise 43
First of Wichita Falls District's Deep Tests Gets Under Way 45
Konawa Pool's Gain in Production Chief Item in Dull Mid-Continent Week 47
Fear of Crude Price Cut Spurs Efforts to Extend Proration to August 1 52
Ohio Oil Completes Second Well in Playa del Rey Field 53
Gasoline Demand is Exceeding Early Estimates of 1930 Requirements 103
U. S. Crude Production and Imports Week Ended May 10 113

Engineering

Central Power Pumps Fight Wells With Oil at 4000 Feet 56
Globe Flow Head Resists Sand Blast of Big Oklahoma City Well 61
Modern Refining—Science and Practice—Article 23—*by Col. George A. Burrell* 66
Intercoolers Used on Absorber at Vapor Recovery Plant—*by H. R. Linhoff* 75

Merchandising

Firestone Denies Intention to Enter Wholesale Gasoline Business 27
Firestone Station Sells Dixie Gasoline and Oils 28
Self Service is Newest Wrinkle in Indiana's Ruffled Market 85
They Meet Your Car and Park It While You Enjoy the Show 93
Twelve Points of Service at Pierce Stations 94

Markets

U. S. Motor Eases Off in Chicago 117
Lube Movement Normal from Gulf 118
Mid-Continent, Soft Spots Develop in Gasoline Markets 119
Venezuelan Crude Quoted at $0.90 Per Barrel 119
Refinery Price Tables 120, 122, 123
California, Cheap Gasoline Disturbs Local Market 126
Pennsylvania, Trading Continues Quiet 127
Eastern Domestic, Gasoline Advances in all Districts 128
Gulf Coast, French Buyer Takes Cargo of Gasoline 128
Wax, Foreign, Domestic Demand Quiet 129
Complete Seaboard Prices 130
Tank Wagon Price Tables 132, 133
Aviation Gasoline Price Table 133
Crude Oil Prices, All Fields 135, 137

Departments

The Editors' Viewpoint 29, 30
The Mid-Continent Skyline 49
Our Industry 54
New Equipment 60, 83, 84, 91
New Patents 84
On The Lazy Bench 90
New Stations Building 96, 97
Along the Air Lanes 101
Oil Company Finance 138, 140, 141 142

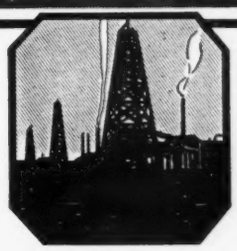
A. W. PEAKE, formerly president of the Dixie Oil Co., Mid-Continent producing subsidiary of the Standard Oil Co. of Indiana, recently was placed in charge of all producing activities of the Indiana company. This necessitated his removal from Tulsa to Chicago.

A graduate in mining engineering from Standford university in 1912, Mr. Peake started his career in oil in the California fields. He held various field jobs there from roustabout to field superintendent.

In 1916 Mr. Peake went to Wyoming as superintendent of field operations for the Midwest Refining Co. By 1928 he was a director of the company, chief engineer and general superintendent. From the Midwest he was transferred to Shreveport and made vice president of the Dixie and shortly thereafter president.

NATIONAL PETROLEUM NEWS

Published at
1213 W. Third St.
Cleveland



Branch Offices
Tulsa, New York, Houston, Chicago

Vol. 22 **CLEVELAND, May 14** **No. 20**

Firestone Denies Intention to Enter Wholesale Gasoline Business

By Roger B. Stafford
N. P. N. STAFF WRITER

IT IS not the policy of the Firestone Tire & Rubber Co. to distribute gasoline to other retail outlets than the one-stop service stations in which it has a financial interest. These stations are operated in both the names of its subsidiary, Firestone Service Stores, Inc., or in the name of a company which is established locally.

The statement as to policy was made by a high official of the Firestone company to NATIONAL PETROLEUM NEWS. Some oil companies, particularly some in business in the Middle West, feared the Firestone company intended to install bulk storage to conduct a wholesale gasoline business in cities where it has one-stop service stations.

Firestone has bulk storage for many of its one-stop stations which are scattered from coast to coast. The bulk storage is at the service station wherever railroads are close by. At other stations the storage is some distance away and is hauled in a small tank truck owned by the local Firestone store.

The latter type of bulk station is really an unloading station, consisting usually of two tanks into which gasoline is unloaded from tank cars and from which the gasoline is removed immediately to the service station tanks, which are of large capacity, the Firestone official said.

In only two cities does the Firestone company distribute gasoline like an oil company, it was said. One of these cities is in West Virginia and the other in North Carolina. In each case the company into which Firestone bought was a gasoline and oil distributing company was a set-up for selling tires and other automobile needs.

When a Firestone station does not have bulk storage, gasoline is bought by tank wagon at the prevailing tank wagon prices under all sorts of contracts. Only branded gasoline are bought in tank car or barge lots and the price is based on the averages of price reporting agencies. No open market purchases have been made, it was said.

Only advertised, trade-mark brands —those widely accepted in the city where Firestone has a station—are purchased. In the case of tank car purchases, the buying is on contract and not on the open market. It is not the intention to buy gasoline on specification and market it under the Firestone name, it was said.

Buying gasoline is not confined to the major oil companies. Gasoline is also bought from Independent jobbing companies, if their brand of gasoline has the acceptance Firestone dealers and officers of the parent company in Akron believe it should have to attract customers in large numbers.

Reciprocity is not demanded in placing contracts for gasoline, it was said, although supplying companies usually are large buyers of Firestone tires and in some instances have standardized on Firestone tires for their motor equipment, it was asserted.

The Firestone stores always handle the brand of lubricating oil being sold by the company that supplies the store with gasoline. In addition the stores handle several brands of premium oil which they secure in most cases, under national contracts.

Accessories and automobile supplies are also bought under national contract, but supplies for individual stores are drawn, in many cases, from the stocks of local distributors of the merchandise.

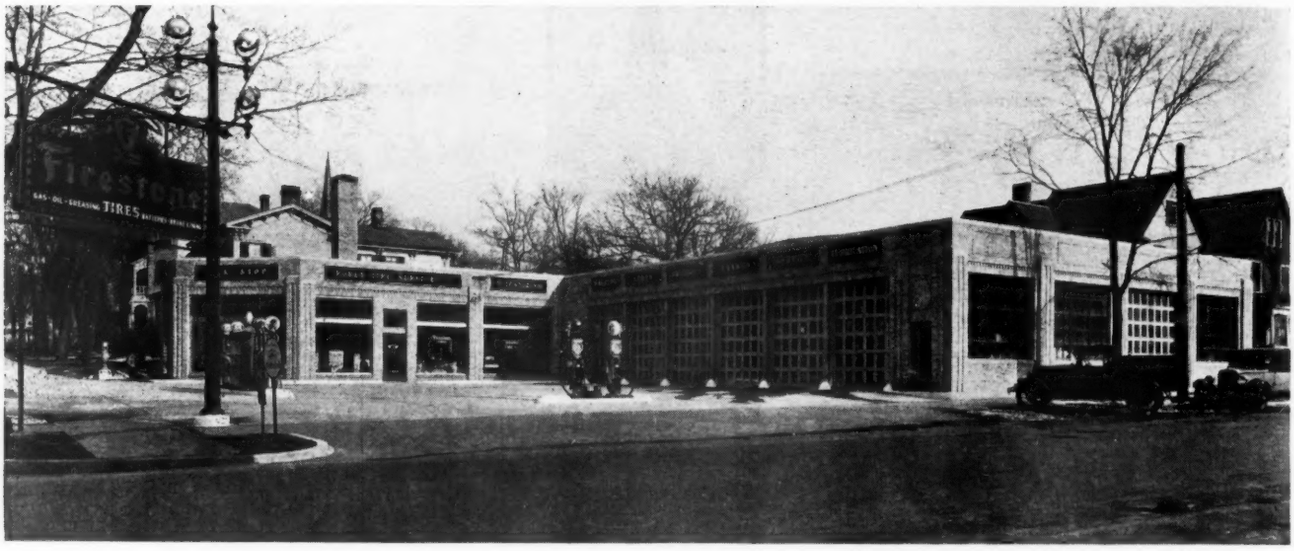
Stations Are Controlled, Seldom Wholly Owned

THE Firestone service station plan is a controlled chain scheme, which is variously referred to as the 51-49 or the M. & M. plan. The M. & M. means majority and minority and the figures mean the percentages of stock ownership between the Firestone company and the local tire man with whom the manufacturer has become a partner.

Firestone owns a majority of stock in the individual stations of the chain but in a relatively few instances owns all of it. A year ago the Firestone company told NATIONAL PETROLEUM NEWS it preferred to have a local, financially interested manager for the stations than one on salary.

The Firestone controlled chain now extends from coast to coast and is being expanded. The company has withheld the exact number of stations it is financially interested in but the number was reported recently to be between 300 and 400. The number is large enough to warrant advertising them nationally.

Firestone Station Sells Dixie Gasoline, Oils



ANN ARBOR, Mich.

DIXIE brand of gasoline is being sold now at a Firestone one-stop service station. The first Firestone one-stop station to take on Dixie is pictured above. It is in Ann Arbor Mich. The Staebler Oil Co. is supplying the petroleum products.

This station was opened April 4. The opening day's gasoline sales amounted to 12,000 gallons. About 5000 balloons were given away at the opening. Mr. Robey, a local tire dealer, operates the station as Robey Tire Service, Inc. The total cost of building and land was about $70,000.

In addition to Dixie brand gasoline and oils the station sells Mobiloil and Quaker State oils.

Settlement With Sinclair Approved by Congress

WASHINGTON, May 12.—Congress has approved a settlement with the Sinclair Crude Oil Purchasing Co., negotiated by Atlee Pomerene and Owen J. Roberts, government counsel in the Teapot Dome litigation, for $2,600,000 plus interest at the rate of 7 per cent, whereby the purchasing company pays for the Teapot Dome crude which the government contracted to sell to the Mammoth Oil Co. when the latter was organized to develop the naval reserve. The Mammoth failed and the Sinclair had to bear its liabilities in respect of oil taken from the dome.

This settlement, approved by the adoption of a resolution by the two houses of Congress, will be followed by the dismissal of the government's suit entered in the federal district court at Wilmington, Del. Adoption was recommended by government counsel as representing the maximum the government could hope to recover by pressing the suit.

An offset was allowed the Sinclair company of $170,000 as being representative of the scrap iron value of seventeen 55,000-barrel tanks erected by the Mammoth-Sinclair company for the storage of fuel oil turned over to the government under the contract for the exchange of crude oil for fuel oil needed by the government.

Publisher of N. P. N. Is Honored

CLEVELAND, May 9.—Warren C. Platt, editor and publisher of NATIONAL PETROLEUM NEWS, May 7 was elected president of the Associated Business Papers, Inc., the organization of leading business journals in this country, at the spring meeting of the association in White Sulphur Springs, W. Va. Mr. Platt has been active in the general interests of business papers and the past year had been vice-president of the association.

To Build Gasoline Plant In Ector County

CLEVELAND, May 13.—Phillips Petroleum Co. is preparing to erect a 20,000,000 cubic foot natural gasoline plant at Judkins, Ector county, Texas. The plant is to be of the absorption type with distillation equipment to handle 25,000 gallons per day.

The site is 25 miles from the company's Crane-Upon plant at Crane. Since it is to be supported by more than six square miles of producing and potential acreage the management is designing the plant for easy expansion. The plant is the third authorized by the company within the past 30 days and will be its 48th.

South Earlsboro Field Gets Two Big Wells

By Telegraph

TULSA, May 13.—Two wells rated at better than 600 barrels per hour each were brought in at the beginning of the week by the Amerada Petroleum Corp., and the Dixie Oil Co., operating as partners. They are Nos. 1 and 2 Grounds in Sec. 23-9-5, in the recently discovered south Earlsboro pool.

A 24-hour gauge on No. 2 was 11,540 barrels which does not represent its potential as it was produced against 80 pounds back pressure, because of lack of pipe line capacity to take the oil away.

No. 1 had not been given 24-hour gauge today, but was rated by the owners at 600 barrels hourly. Both produce from the regular Simpson formation pay of the district.

Invitation to the Tulsa Exposition

WASHINGTON, May 12.—The Senate has adopted the joint resolution, adopted by the House of Representatives some time ago, authorizing the issuance of invitations to the petroleum exposition at Tulsa this fall. The resolution is in the form that heretofore has been used in inviting states governments to participate in the exposition.

The Editors' Viewpoint

National Petroleum News

Proration Is Inevitable With or Without a Cut Price

CRUDE production is creeping up gradually once more in several states. There are rumblings of discontent here and there as producers are beginning to ask for a lifting of proration so that they can sell a little more oil.

The following analysis of conditions in our industry was prepared at a timely moment by Ray M. Collins, Oklahoma's proration umpire and a member of Secretary Wilbur's oil economics committee. Mr. Collins was induced by NATIONAL PETROLEUM NEWS to give the analysis publication. We therefore present Mr. Collins as our special editorial writer for this week.—Editor.

By Ray M. Collins

I WONDER if the producers realize the position that they are in at the present time. They all know that there is a tremendous over-production in the United States and South America and that this condition is facing us for the next three years. What steps are they taking to remedy the situation? Proration? Yes! But is that enough? No.

Some say we must have a tariff, but in the meantime are we to continue curtailing production without taking further steps to curb the drilling?

I have heard a number of producers advocating the lifting of the lid and going back to the law of supply and demand. Let's take a look at such a picture. First we would have a small increase in the pipe line runs. Second, a cut in the price, finally demoralization in the market structure. The purchasing pipe line companies would buy what oil they needed and the individual producers could either build tanks and store their oil or sell only a portion of the total. The day of storing the excess oil is a thing of the past.

Therefore, if the law of supply and demand is the rule we can look forward to lower prices and a proration of the total production by the pipe lines.

Is it possible that a sane business man will elect to take proration by pipe lines at a lesser price rather than curtail production voluntarily and receive a better price. If three or six months' storing would do the trick I would certainly favor taking my medicine, but such a course would only be a temporary relief and mean the ruin of many a company.

There has been some talk of the independent being prorated out of business. It isn't the independent who is being forced to quit but the high cost production is giving way to the low cost. If the independent owns production that is costing him more to produce than the production stored by the larger companies it is only a matter of time before he will have to quit business. On the other hand if the independent producer has the low cost producers he will be the one to survive.

We have always considered the thousands of small wells as the backbone of the industry. Whenever these wells become a liability instead of an asset there will be a wholesale abandonment of the non-payers. One can live on hopes for a short time and then it's a case of rustling for the bacon. There is no question but that the oil from these wells will be needed at a later date and that they will become the backbone of the industry once more—but in the meantime the back is broken.

We have all blamed the Standard for cutting the price of crude at the time they did, but were they really at fault? The producers in Oklahoma have controlled the production to the demand but their efforts will prove futile unless Texas and South America do likewise. It looks like tariff for the one and a prohibitive low price for the other.

It is up to you Mr. Producer in Texas and Venezuela whether we are to continue having prosperity in 1930 and 1931 or on the other hand bankruptcy and control of our output by the major companies. If the latter comes to pass the people in the United States will see that this country has a big import duty on crude.

It isn't the independent producer who is to blame for the present condition. Neither is it any one major company, but it is the fault of the competitive methods used by one and all.

There are no laws that can stop a man from drilling or control the output of a refinery, therefore, we are forced to control the source of the supply. It can be done voluntarily or by price reduction. The producers in Oklahoma and Texas would help the present situation and make more real net profits for their stockholders if they would agree to a plan proposed by Mr. Slick which is along the following lines:

All leases containing less than 160 acres shall be unitized and the producers in any area where there is competitive drilling shall agree to develop their acreage with one string of tools to 160 acres. Where it is impossible to unitize the acreage into 160-acre units, 40-acre or 80-acre units should be adopted and the one string of tools to the unit agreed to. Unitization of acreage and drilling agreements must be arranged before the drilling of the discovery well or wells.

Making Business Good

"BUSINESS is Good," says J. B. Russ, of the Consolidated Oil Co., Houston, president of the Texas Petroleum Marketers Association, in answer to his own question, "How's Business?", in a recent bulletin to his members.

"It will be better during the balance of 1930, providing you make Service and Quality Products the magnets to attract it," he continues.

"The winter season generally depresses us and our business. In meetings held during that period the thoughts and expressions as to business prospects are always pessimistic. Optimism should return with the sunshine and good road conditions. We now have the sunshine. Motor vehicle traffic is heavy and will steadily increase.

"Discard your pessimism as you did your overcoat.

"Don't waste this valuable time and opportunity by

watching and complaining of the action of competitors. Tend to your own business. Roll up your sleeves and recheck your operations.

"Examine your costs closely and eliminate economic waste. Watch your margin of profits. You're in business to make fair profits. Put into it the personal touch which is so important. Sell yourself and your products. . . .

"Business will be good for you if, in the language of the Texas country boy, you will stay in there and pitch."

Interstate War Involves Trucks

IN THEIR desire to avoid any appearance of influencing governmental agencies corporations frequently neglect their own rights. An instant case is that involving reciprocal rights of trucks to travel interstate. Oklahoma and Kansas went to war about two years ago and each started arresting drivers of trucks who displayed only license from the other state. Recently Missouri joined in the fun and now Oklahoma truck drivers are nabbed in Missouri and Oklahoma catches those from Missouri. Clearly, the need for a tri-state peace conference is indicated.

The fault seems to lie with Oklahoma. It is claimed by the highway department that there is no law permitting reciprocal recognition of truck licenses between it and other states. The other states retaliate, of course.

Common sense is required. The highway department certainly does a number of things that are not specifically directed to its attention by the legislature. Might it not enact an interim law of its own and let the next legislature ratify it?

The corporations affected, many of whom are oil companies, should get over their reluctance to approach their government and serve a demand that the foolishness be stopped. Companies that operate trucks in the northern part of Oklahoma or Southern Kansas must, from time to time, send those trucks across the line. There is no sense in paying two license fees on one truck; yet that is what they must do or suffer the loss of time and money occasioned when a policeman hails the driver before a court.

Overproduction of Crude Becomes Problem in Pennsylvania

CLEVELAND, May 12

OVERPRODUCTION of crude is becoming a problem in the Pennsylvania gradefields, particularly in the Bradford field where repressuring has been successful, according to both the Pennsylvania Grade Crude Oil Association and the Northwestern Pennsylvania Oil Producers' Association.

Production of Pennsylvania grade crude oil reached approximately 76,000 barrels daily in February as compared with 83,000 barrels daily in 1880 and 1881 when the Pennsylvania region was at its peak. Production of Pennsylvania grade crude oil averaged 64,086 barrels daily last year with a steady rise in the rate since September when the effects of last year's repressuring operations began to show.

The production of the Bradford field averaged 32,450 barrels daily in April which volume was an increase of 9 per cent over March production and 15 per cent over January production. The Northwestern Pennsylvania association is considering a curtailment program to help maintain the price of Pennsylvania grade crude which recently was cut 25 cents a barrel to $2.50 a barrel by the Joseph Seep Purchasing Agency and $2.75 cents a barrel by the Tide Water Pipe Line Co.

Overproduction and not competition was the cause of the recent price reduction, according to Forrest D. Dorn, president of the Pennsylvania Grade Crude Oil Association and the Forrest Oil Co., one of the leading repressuring operators in the Bradford field.

"At no time," said Mr. Dorn, "have reductions in the prices of Pennsylvania oil represented any attempt at price adjustment to meet competition from any Mid-Continent oil.

"The outstanding success of water flooding and other improved repressuring methods in the Pennsylvania field in producing oil in great quantities from territory which had been considered practically played out, attracted the attention of the entire oil industry. Producers in oil fields in other parts of the country, lacking the natural advantages in sand formation of the Pennsylvania field, have been unable to employ these methods of oil recovery to economic advantage.

"As a result of the sensational rejuvenation of the Pennsylvania field tremendous investments of capital have been attracted to this section. During the past year or so, there has been an activity in drilling comparable to the periods of 1880 and 1881 when the field reached its era of greatest production. The work started at that time has reaped a harvest of overproduction which has exceeded even the increased demand for the Pennsylvania product.

"This is a situation, which evidence at hand shows will adjust itself and result in an upward trend in the market price of Pennsylvania crude in the near future. The peak period of overproduction will have been passed by June. Drilling operations for the present year are only about 50 per cent of those under way last year. This means a decreased production for the coming 12 months. Since the Pennsylvania field is all proved territory, it will be possible in view of the past year's experience for producers to so regulate their flooding operations as to keep a reasonable balance between supply and demand."

See Priority Trouble About Oil Permits

WASHINGTON, May 8.—Attorneys interested in behalf of clients in applications for permits desiring permits to explore for oil and gas foresee considerable trouble for Secretary Wilbur and for their clients about the priority of applications when Secretary Wilbur is finally ordered by the courts to reinstate applications and to receive applications. Writs of mandamus, they point out, will relate to the time when applications for permits were tendered. So far as they know none of the various land offices made any record of the time when applications were tendered. The time, therefore, will have to be determined without the help of official records.

There will be no such trouble about permit applications that were received and then returned to the applicants. The official records will show the time of filing and the status of such applications at the time they were returned. That, however, will not be the fact with respect to permit applications that were tendered but refused. If the applicants noted the time and had witnesses make records at the time of the prospectively unlawful rejections the problem will be comparatively simple. Otherwise, however, the pessimistic lawyers, can see only trouble and much of it.

State Gasoline Tax Exempts Kentucky Oil Men from New Sales Tax

By E. L. Barringer
N. P. N. STAFF WRITER

LOUISVILLE, May 8

KENTUCKY jobbers may be exempt from paying the state gross sales tax through the state gasoline tax C. E. Cantrill, Indian Refining Co., representative at Lexington, reported at the annual convention of the Kentucky Petroleum Marketers' Association here May 6 and 7.

Gasoline tax payments may be deducted from the amount to be collected on the gross sales tax law, he reported hence oil jobbers would not have to pay another tax. Mr. Cantrill is chairman of the Association's legislative committee, and reported the oil men's exemption after discussing the law with a state senator.

Since the state gasoline tax yields more revenue than a gross sales tax on oil Mr. Cantrill reported that the senator did not believe that law applicable to the oil industry.

"If a grocer was to be taxed $250 under the gross sales tax he would be allowed to deduct his special taxes," said Mr. Cantrill. "If special taxes or licenses for tobacco and the like came to $40 this grocer would pay $250 less $40, or a net of $210. That is the intent of the law the senator said. By the same reasoning the oil man would not pay any tax because his gasoline tax payments would be larger than the amount of his gross sales tax."

The gross sales tax is aimed at burdening the chain stores. Several state courts in the east and south have declared unconstitutional laws to license retail units in a chain. Legislators are turning to the gross sales tax as a legal method of taxing chain stores since the license laws have been thrown out by the courts. In Kentucky the gross sales tax became effective early this year and has a progressive rate of payment on sales beginning with one-twentieth of 1 per cent on sales of $400,000 to $500,000 annually and a maximum payment of 1 per cent on gross sales of more than $1,000,000.

Mr. Cantrill also reported that Kentucky oil men would receive 1 per cent for collecting the state gasoline tax beginning June 1, and that this provision would be used as a means of curbing gas tax dodgers. The state collects a 5 cents a gallon tax on gasoline now, based on sales, and payable monthly.

Jobbers and dealers will be licensed by the state and allowed 1 per cent as agents for collecting the gasoline tax. In case the dealer or jobber is not considered financially capable the 1 per cent will not be paid, but will be used to meet premiums on a bond to be required from this type of business man. Thus the gasoline tax dodger will be bonded, and will not receive the 1 per cent refund.

Clarence E. Bauer
Elected president of the Kentucky Petroleum Marketers' Association last week. Mr. Bauer is president of the Continental Oil Co., a jobber company in Louisville and southern Indiana

The code of ethics discussion was conducted by Paul E. Hadlick, secretary of the marketing division of the American Petroleum Institute. Mr. Hadlick's address was published in NATIONAL PETROLEUM NEWS May 7, issue page 41.

About an hour was given to answering questions on moving equipment at service stations, painting stations, lease and license agreements, and exchange of underground equipment.

R. R. Johnston, assistant manager of the Gulf Refining Co., Louisville, was emphatic in his praise of the code benefits in Kentucky.

"The code in Kentucky has done away with the filling of the other fellow's equipment with your own gasoline; it has eliminated the giving away of premiums and free oil on opening days; and it has brought all marketers to respect the other fellow's contracts," Mr. Johnston said in pointing out the benefits of the code. The Gulf Refining Co. markets about 20 per cent of the gasoline consumed in Kentucky.

Clarence E. Bauer, president of the Continental Oil Co., Louisville, (not connected with the Continental Oil Co. of Delaware except for selling Conoco gasoline and oil) was elected president. He succeeds E. D. Johnson, formerly with the Kentucky Independent Oil Co., Covington, Ky., which sold out to the Shell Petroleum Corp. recently.

J. M. Giles, Giles Oil Co., Cynthiana, was elected first vice-president; L. O. Baucum, Jackson Purchase Oil Co., Murray, second vice-president; and L. J. Connolly, Continental Oil Co. at Louisville, was retained as secretary-treasurer, until a full time secretary is obtained. The Association is seeking a full time secretary-treasurer to work for the organization and for the state code committee.

Directors elected are W. S. Glore, Sr., Glore Oil Co., Danville; W. F. Gardner, Standard Oil Co. of Kentucky and O. B. Grigsby, Home Oil Co., Maysville.

Mr. Bauer reported that the membership of the Association had more than doubled in the past year with 18 active members and 8 associated members now. About 85 per cent of the state's gasoline gallonage is represented in the Association. About 50 oil men attended the convention meetings.

Tax Rates On Gross Sales in Kentucky

Following is the scale for taxing gross sales in Kentucky:

One-twentieth of 1 per cent on sales of $400,000 or less.

Two-twentieths of 1 per cent from $400,000 to $500,000.

Five-twentieths of 1 per cent from $500,000 to $600,000.

Eight-twentieths of 1 per cent from $600,000 to $700,000.

Eleven-twentieths of 1 per cent from $700,000 to $800,000.

Fourteen-twentieths of 1 per cent from $800,000 to $900,000.

Seventeen twentieths of 1 per cent from $900,000 to $1,000,000.

One per cent on $1,000,000 and over.

Review of Late Production News

DAILY average production in the U. S. declined 50 barrels, to 2,595,150 barrels the week ended May 10, according to the American Petroleum Institute. This was the smallest change in many months.

Crude oil imports declined 16,715 barrels, daily average, to 166,715 barrels. Total new crude supply was 2,761,865 barrels per day, a decline of 16,765 barrels under the previous week.

Production in Oklahoma declined 5450 barrels, California gained 1700 barrels.

The largest change of the week occurred in the St. Louis field which gained 7100 barrels. The new Konawa field gained 6500 barrels. Seminole output fell 4150 barrels; Little River and East Little River fell 8750 barrels, Bowlegs 4600 and Oklahoma City 3200 barrels.

In Texas fields, Gray county declined 2650 barrels and Yates 1500 barrels. Hutchinson county gained 2250 barrels; Crane-Upton 2300 barrels and Van Zandt 2400 barrels.

Oklahoma-Kansas

INCREASE in production of the Konawa pool of Seminole county, one of the flush areas of Oklahoma, was the chief item of interest in a week devoid of new discovery. It reached its highest production to date on May 9 when 23,000 barrels were tanked. More than two-thirds of that amount came from four wells, the best yet completed.

Oklahoma City operators have made known to the proration committee of the Mid-Continent Oil & Gas Association that they feel more severe proration should be imposed upon fields of the Seminole territory and that a greater amount of oil should be run from the Oklahoma City pool. A conference on the matter is expected to be called at an early date.

In Kansas an extension of a quarter mile was effected to the new Raymond pool in Rice county, southwest of Lyons. Other areas of the state were devoid of outstanding completions.

California

CONSERVATION leaders will hold a series of meetings during the coming week in a last attempt to induce independent operators in these two fields to stay in line with the march of orderly development. If operators in these fields have not signified their willingness by May 15 to continue with the proration and

Current production in this country by pools is found on page 113.

reduction of crude production for at least another three-month period—May 1 to Aug. 1—it is freely predicted that crude oil prices in these fields will be cut. Fields that have continued operating under a conservation program will not be affected by any revision of the crude structure.

Elwood operators have agreed to curtail their daily output to any desired figure provided it is in accord with other fields classed as having flush production.

Active drilling in the Playa del Rey field was increased by the completion of Ohio Oil Co.'s second well in the area. Approximately 10 wells will have reached the critical depth during the next two weeks and a more definite determination of the field's limits will be possible.

Wyoming, Montana

THERE are eleven active wells drilling on the Montana side, and six on the Alberta side of the new border oil field which lies across the international line.

Gebo Consolidated Oil Co. reports a good showing of light oil in the Frontier formation in its wildcat well on Gebo dome.

Operations on the huge Wyoming structure, in southern Lincoln county, southwestern Wyoming, have been resumed by the Mountain Oil Corp. This is a major group development which was approved by the Interior Department. The test well was drilling around 300 feet at last report.

California Co. has abandoned its Muddy Creek deep test wildcat well in Uinta county, Wyoming.

Utah Southern Oil Co. is making good progress in its test of the shore lines of the Eastern Utah Salt Basin, in Grand county. Total depth is 2050 feet, with the Pennsylvanian expected at 2300 feet.

Continental Oil Co. has salt water in its deep test in southeastern Colorado on the Pipe Springs structure. Test will be continued as deep as drilling conditions permit to obtain geological information.

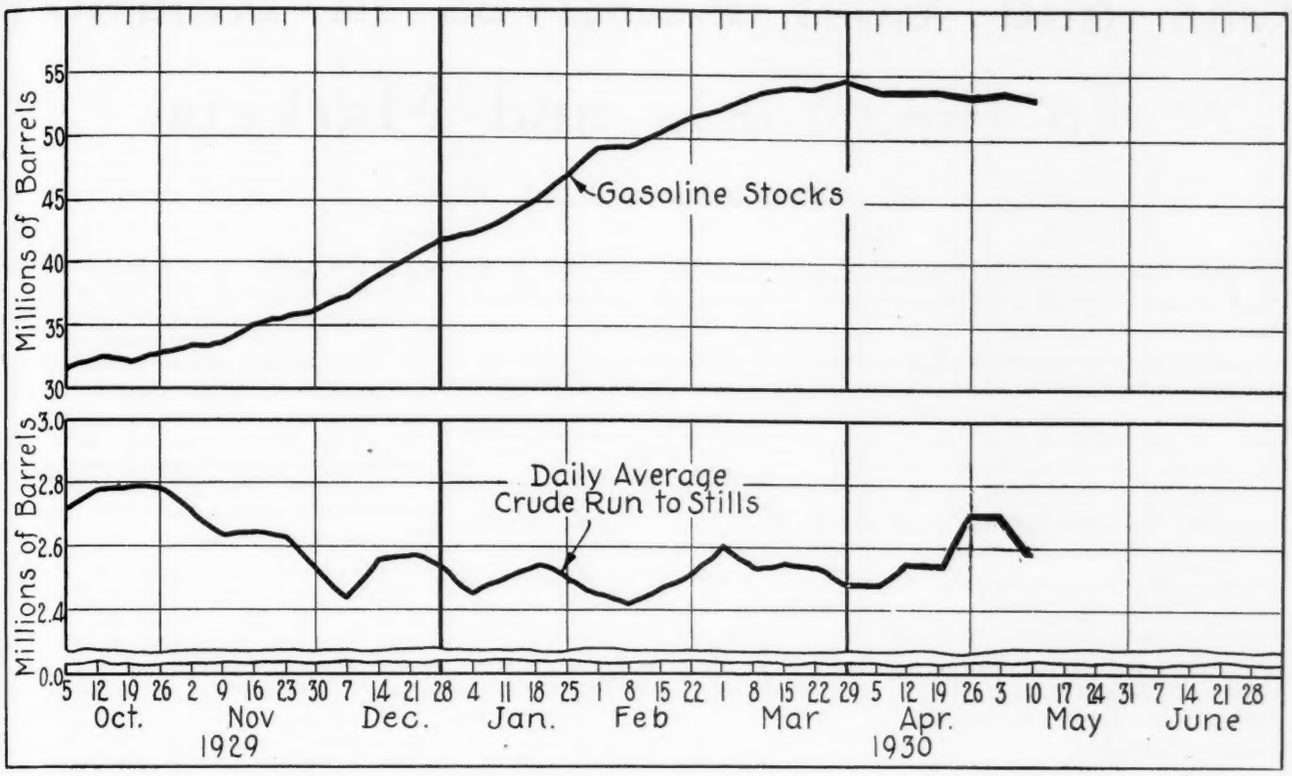
Texas, New Mexico, Louisiana

TOTAL daily distribution of West Texas crude oil, in trunk pipelines, tank car shipments and for use in refineries local to the region, dropped to the low level of 354,000 barrels daily in the first week of May. This compares with 316,000 barrels daily production in the Permian salt basin geological province, where prorating practice continues to keep an enormous potential supply of crude off markets that cannot absorb it. Indicated withdrawals from West Texas storage were, therefore, nearly 38,000 barrels daily in the period mentioned.

Completion of Humble Pipe Line Co.'s extension into the Hobbs, New Mexico, district will influence the taking of greater quantities of crude from the Lea county division of the salt basin territory. Atlantic Pipe Line Co.'s extension from Midland to Hobbs is also nearing completion and the certainty that Shell Pipe Line Corp. will go into the territory is shown by its soliciting connections at Hobbs.

Louisiana operators, who predominate in Mississippi wildcatting, again turned their attention to the Jackson area when Love Bros., of Shreveport, got a 28,000,000 cubic foot gasser in 11-5-1E, a mile north of the Gulf Refining Co. of Louisiana test that recently showed oil before turning to salt water. The Love Bros. test is bottomed at 2449 feet in what is called the Monroe gas rock.

U. S. Crude Runs and Gasoline Stocks as Reported Weekly by A. P. I.



U. S. Gasoline Stocks Reduced 623,000 Barrels

By Telegraph

NEW YORK, May 13

CRUDE runs at U. S. refineries were increased 78,400 barrels daily average in the week ended May 10 according to reports gathered by the American Petroleum Institute from 95.6 per cent of the country's capacity.

Refiners in the Texas district increased their crude runs 77,600 barrels daily average to 88.1 per cent of their rated capacity. The previous week operations were at the rate of 77.2 per cent of capacity. Texas Gulf Coast refiners increased their runs 54,800 barrels to 90.9 per cent of capacity. The increase at interior plants in the state was thus 22,800 barrels daily average.

The huge increase in throughput in the Southwest was partially offset by a reduction of 25,500 barrels daily average reported by East Coast Refiners. The eastern plants ran at 78.5 per cent of capacity as compared with 81.9 per cent the previous week. A small cut in runs was reported by California refiners.

Indiana-Illinois refiners increased their crude runs 11,200 barrels daily average until they ran at 89.0 per cent of capacity during the week. Small increases were shown in other districts.

Gasoline stocks at refineries were reduced 623,000 barrels during the week as demand for motor fuels increased sharply. Fuel and gas oil stocks increased 934,000 barrels to 136,949,000 barrels.

The Institute has been troubled in recent weeks by receiving reports late. It requests refiners to use their best efforts to dispatch reports a little earlier. The Institute statisticians now are seeking to compile weekly figures on the output of cracked gasoline to add to the present report.

Current Refinery Operations

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended		Per Cent of Reporting Capacity Operated Week Ended		Stocks (Thousands of Barrels)			
		May 10	May 3	May 10	May 3	Gasoline May 10	Gasoline May 3	Gas & Fuel Oil May 10	Gas & Fuel Oil May 3
East Coast	100.0	475,300	495,800	78.5	81.9	9,246	9,621	6,906	6,679
Appalachian	89.1	91,600	88,400	80.3	75.8	1,788	1,829	760	762
Ind.-Ill.-Ky.	99.5	334,800	323,600	89.0	86.1	8,553	8,589	3,751	3,626
Okla.-Kans.-Mo.	89.1	303,900	301,800	73.8	73.3	4,455	4,399	4,183	4,123
Texas	90.8	630,400	552,800	88.1	77.2	7,942	8,025	10,132	9,624
La.-Ark.	96.8	171,300	167,100	65.4	63.8	2,615	2,664	1,985	1,942
Rocky Mountain	93.6	59,300	56,900	42.6	40.9	2,743	2,817	1,083	1,097
California	99.3	593,700	595,500	66.6	66.8	15,861	15,882	108,149	108,162
Total	95.6	2,660,300	2,581,900	75.7	73.4	53,203	53,826	136,949	136,015
Texas (Gulf Coast)	100.0	478,600	423,800	90.9	80.5	6,725	6,948	7,413	6,984
La. (Gulf Coast)	100.0	117,400	109,300	79.6	74.1	2,221	2,282	1,111	1,065

Gas and Coal Reserves in Relation To Pipe Lines and Markets

By L. G. Huntley* and S. L. Mason*

ONE of the greatest industrial developments the past few years in this country has been the expansion of the distribution of natural gas through long distance pipe lines.

Discussing the probable effect of this expanding market for gas upon future gas reserves, the authors bring out one point in which oil producing companies are vitally interested—namely that the past average gas-oil ratio of 2250 cubic feet of gas to one barrel of oil will be maintained in the future and perhaps even increased.

Reserves of natural gas in this country, in the light of estimated consumption, are sufficient for from 50 to 165 years, depending whether maximum or minimum amounts are eventually realized.

The fact that investments in pipe line systems can be amortized in much less than the 50 years minimum estimate, and that additional economies may be presented in hooking up proposed extensive natural gas line with coal hydrogenation plants in the coal fields, is looked upon as evidence that the proposed gas line systems now under discussion will eventually be built, and coming years see a greater expansion of the gas industry.—EDITOR.

IT IS well known that the gas situation in the United States is in the process of a radical change. Up until a few years ago gas was marketed mainly in the areas outlined as gas regions on the accompanying map. These regions are generally outlined here to include the important gas producing areas and the network of pipe lines. The trunk lines extending from these are recently installed, are in the process of building, or are contemplated in tentative plans. The final hook-up of these and their subsidiary lines will advance the position of natural gas greatly in the list of national power sources. The reserves supporting the enormous investment involved are of vital importance.

In a paper read before the sectional meeting of the American Petroleum Institute at Pittsburgh, April 7, 1930, H. R. Pierce summarized the statements of the most competent economists in the oil industry as to the present remaining oil reserve of the United States. His summary gave an estimate varying from a minimum of three to a maximum of ten times past production. Using, as did Pierce, the figure of ten billion barrels of oil as the past production from the oil fields of the United States, the minimum remaining reserve would be 30 billion barrels, and the maximum 100 billion barrels.

Our discussion here covers only the area east of the Rockies. Assuming that California and the Pacific Coast reserves will be in the same ratio as the past production of California bears to the past production of the rest of the country, a simple calculation allows a minimum of 8 billion barrels and a maximum of 26.5 billion barrels for the reserve of the Pacific Coast. This leaves a reserve for the fields east of the Rocky Mountains of from 22 billion to 73.5 billion barrels.

The accompanying tabulation shows the amount of gas produced per barrel of oil in the various oil producing states east of the Rockies since 1914. The only gas production recorded and so available here is limited to that delivered to consumers.

The more meager statistics on the natural gas industry previous to 1914 are not considered pertinent; as, except in a few states, previous to that year, natural gas was more or less a drug on the market. Its price at the well was so low that a large proportion was wasted annually in the search for oil, and no record of its production kept. Large wells were allowed to blow wide open, open flambeaux were burned day and night, and so forth.

From the statistics kept since 1914 it appears that an average of 2250 cubic feet of gas were produced per barrel of oil. As the development of natural gas in the U. S. until recently has been a function of the search for oil with which it is associated, it is believed that this same ratio will hold in the future. In fact in those states in which oil development had been most intensive, there is a gradual increase of the gas ratio annually. This is brought about both through a growing appreciation of the function of gas pressure in the production of oil, and the development of more efficient methods of conservation of both materials. Also because of the development of markets for natural gas in the newer states, this increase in value

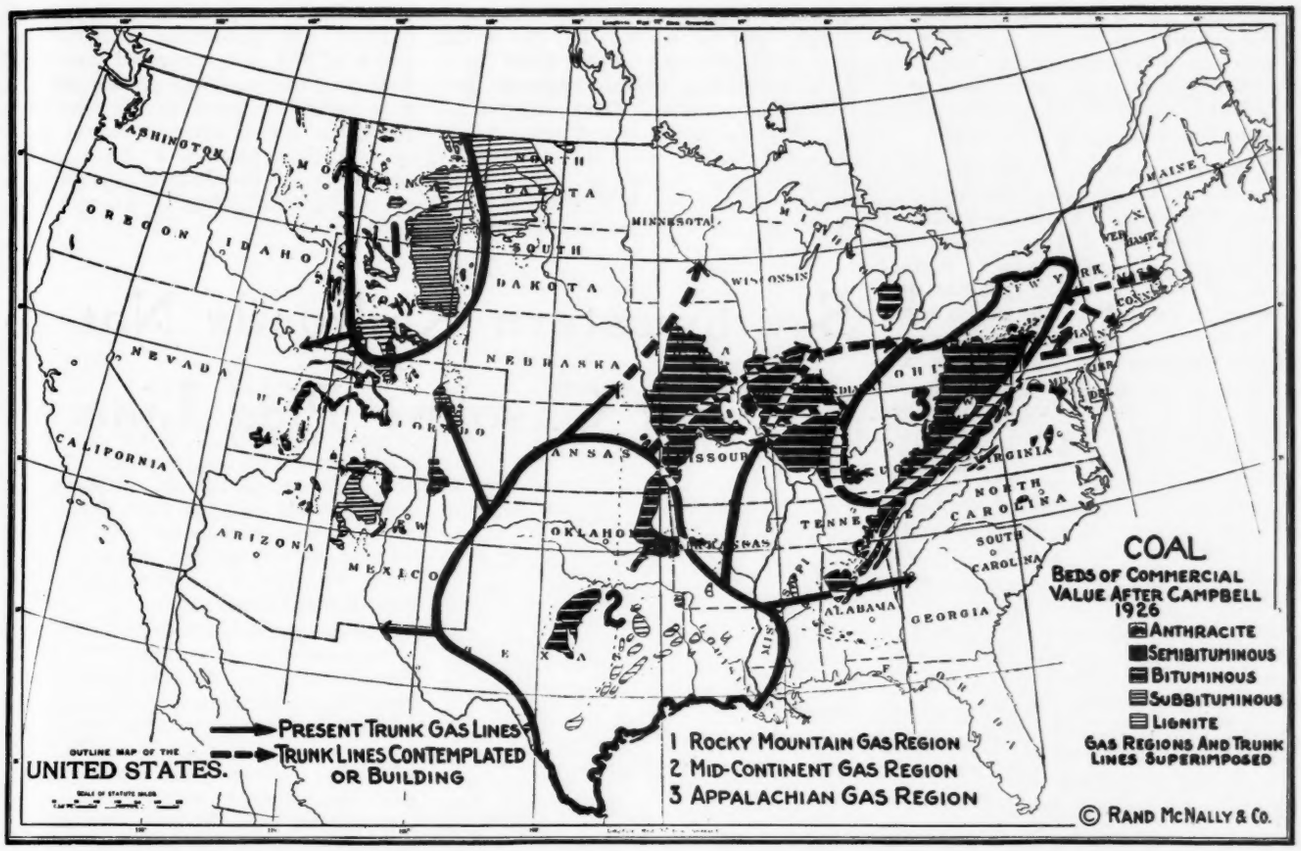
*Huntley & Huntley, consulting geologists, Pittsburgh, Pa.

Cubic Feet of Gas per Barrel of Oil, By Years, In Various

	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
Illinois	162	141	200	281	335	320	280	263	360	464	504	530	490
Indiana	1,931	2,581	2,230	2,253	1,899	1,448	1,883	920	871	843	1,067	1,409	1,114
Kansas	7,225	9,584	3,629	670	612	488	542	431	639	1,094	887	701	918
Kentucky	2,827	3,814	1,753	907	692	222	383	535	654	1,481	1,738	1,593	1,659
Louisiana	1,871	1,404	2,104	2,746	2,250	2,738	1,617	2,140	1,986	4,496	7,619	7,524	6,785
New York	9,515	8,983	9,194	9,512	10,458	9,546	9,292	6,663	6,947	5,197	4,302	3,663	3,592
Ohio	7,997	10,160	9,024	8,891	8,409	8,163	7,874	6,463	7,592	7,595	6,958	5,994	6,513
Oklahoma	1,061	893	1,153	1,277	1,202	1,882	1,454	1,082	940	1,262	1,236	1,410	1,598
Pennsylvania	13,555	14,505	17,185	17,250	16,703	13,947	16,911	11,613	13,640	14,793	14,141	12,551	11,950
Texas	669	534	571	526	347	311	374	419	403	568	797	932	1,050
West Virginia	24,431	26,336	34,282	36,832	33,705	28,112	29,060	22,362	27,814	32,064	30,791	31,293	30,309
Wyoming	.....	80	92	136	344	456	612	807	876	793	1,165	1,557	1,806

$$\frac{10{,}941{,}729{,}000}{4{,}845{,}177} = 2258 \text{ cu. ft. gas average per bbl. oil.}$$

*Figures from U. S. Bureau of Mines—Mineral Resources.



A map of the principal natural gas producing districts in this country, shown as areas within heavy lines, with present trunk gas lines shown in solid black lines and trunk lines proposed or building shown in broken lines. Beds of various kinds of coal are shown on the same map to show their relation either to gas producing districts or to territories crossed by present or contemplated gas trunk lines

has led to the conservation of natural gas for its own sake. There are some exceptions to this increase in natural gas ratio. For instance, in 1917, when the "Granite Ridge" oil fields were developed in Kansas, the fact that this oil was produced by hydrostatic pressure without large quantities of gas, served to change the gas to oil ratio of the state for some years. Again, in Louisiana, between the years of 1924 and 1927, there was a marked increase in the gas-oil ratio, brought about by the completion of several large pipe lines to important markets. This was entirely an artificial cause.

While it might be hazardous to predict a stable gas oil ratio for the future of any particular state among those producing both materials, owing to unpredictable variations in the conditions under which future reserves will be found to exist, yet it is considered safe to assume that with a national hook-up of fields and pipe lines, including 16 producing states, the average conditions will result in maintaining a gas-oil ratio at least equal to that of the past 15 years. With better conservation and producing methods and with the tendency toward greater gas proportion in the deeper sands, the average gas-oil ratio will undoubtedly rise. The national hook-up is thus an insurance against the uncertainties of varying local conditions. With a rising price natural gas reserves will be developed for their own sake without reference to oil exploration. We have therefore assumed that the past average of 2250 cubic feet of natural gas per barrel of oil will be maintained in the future.

With 2250 cubic feet of gas per barrel of oil, we can count upon a minimum of 49,500,000 million cubic feet and a maximum of 164,375,000 million cubic feet gas reserve.

Another table shows the distribution of population residing in states and towns of 10,000 or more in those parts of the 36 states likely to be served eventually by the proposed pipe line systems. Although it is not prob-

Gas Producing Districts*

1927	Total Amt. Gas Produced 1914-1927 Thous. Cu. Ft.	Total Amt. Oil Produced 1914-1927 Thous. Bbls.	State
634	51,386,000	169,384	..... Illinois
1,319	20,205,000	13,248	..... Indiana
1,038	371,113,000	414,937	..... Kansas
1,519	83,328,000	80,829	..... Kentucky
8,193	1,155,364,000	302,899	.... Louisiana
2,635	103,692,000	16,718	.... New York
6,766	812,017,000	104,366	..... Ohio
1,176	2,413,811,000	1,915,001	.... Oklahoma
11,096	1,571,682,000	110,839	.. Pennsylvania
1,168	973,386,000	1,339,401	..... Texas
26,959	3,106,708,000	105,351	.. West Virginia
2,045	279,037,000	272,204	... Wyoming
	10,941,729,000	4,845,177	..... Total

Population, in towns of 10,000 and over. In these sections of the 36 states likely to be served by proposed gas pipe line systems.*

Alabama	472,356
Arkansas	195,044
Colorado	403,892
Connecticut	1,194,804
Delaware	128,500
District of Columbia	552,000
Northern Georgia	475,815
Illinois	4,537,653
Indiana	1,439,782
Iowa	685,690
Kansas	504,973
Kentucky	566,155
Louisiana	595,395
Maryland	920,166
Massachusetts	3,454,698
Michigan	2,571,840
Minnesota	761,074
Mississippi	147,793
Missouri	1,529,901
Montana	128,696
Eastern Nebraska	322,456
New Hampshire	199,266
New Jersey	2,431,233
New Mexico	17,500
New York	8,835,264
Ohio	3,828,155
Oklahoma	511,207
Pennsylvania	5,123,772
Rhode Island	571,647
Tennessee	542,987
Texas	1,532,904
Northern Utah	177,100
Vermont	60,293
Southern Wisconsin	773,105
Wyoming	46,490
Total	46,551,756

*Compiled from Rand McNally Commercial Atlas, 1930.

able that all of the towns used in these calculations will be served by the lines, this difference will be made up by smaller towns not calculated here. In round numbers 47,000,000 people live in towns that will be served.

With an average annual gas consumption of 50,000 cubic feet per consumer, and assuming one consumer for every ten persons, the pipe line system could eventually count upon an annual domestic consumption of 235,000 million cubic feet. Both the assumptions of 50,000 cubic feet per consumer and of one consumer per ten persons, are very conservative. In different regions the average consumption per meter will vary from 30,000 cubic feet to 150,000 cubic feet depending on climate and on price. The average proportion of consumers to population will vary from one in four to one in 15.

The present ratio of domestic to industrial consumption is approximately one to three, which would make an estimated annual consumption of 940,000 million cubic feet for both domestic and industrial. The reserves of natural gas as estimated above would therefore be sufficient for from 50 to 165 years, depending upon whether the maximum or minimum amounts were eventually realized.

It cannot be assumed that the present ratio of domestic to industrial consumption will be maintained with the increasing cost and relative scarcity in the future. There will be a gradual dropping off of industrial consumption or a gradual substitution of various mixtures of artificial gas blended with the natural (thus lengthening the life of available gas reserves). Artificial gas in now relatively expensive as compared to natural gas, especially where it is produced at the point of consumption to which coal must be hauled by rail. This cost will decline as plants are built along the main trunk line where they cross important coal fields.

The Bureau of Mines has shown that power from gas derived from as low rank coal as lignite is comparable in cost to that from natural gas, and fully as cheap as most hydro-electric power. The large financial interests involved in the present mergers of pipe lines and utilities, including large coal and coking interests, have apparently satisfied themselves of the essential soundness of these conclusions as applied to the large amounts of money involved. The additional economies from having an outlet for by-product gas and for materials such as coal tars, which could be hydrogenated but are now burned inefficiently, will add to the power resources.

The investment in this great system of pipe lines can easily be amortized from much less than 50 years supply of natural gas, even though no safe estimate can be made as to the rate at which more than the first ten years supply will be recovered. The great coal fields through which these lines pass in both the Mid-Continent and Appalachian region offer double security for the pipe line investment. Looking still further into the future the greatest coal fields in the United States, in tonnage if not in area lie just east of the Rocky Mountains, generally corresponding to a present natural gas producing region. Because of the self contained nature of the pipe line-gas-coal system at present being developed, the northwestern region is not of interest except as it still further assures a great source of power for the future, accessible to the rest of the nation if, as, and when needed.

Southwestern Railroads Not to Fight Gasoline Pipe Line

Staff Special
TULSA, May 10

A PARTIAL victory for the Barnsdall Corp. in its negotiations with railroads relative to the plans of Barnsdall for laying a gasoline pipe line was obtained May 8. At this time executives of railroads met with E. B. Reeser, Barnsdall president, in his office.

Opposition to this line, which has been under consideration for several months, arose early this year and certain carriers made it known that they would not grant easement across their rights-of-way at points where the gasoline would cross. In certain of the states to be traversed there is no law giving the right of eminent domain to pipe lines and crossings of railroads can be made only with the consent of the carriers affected.

Mr. Reeser countered with the proposal that carriers from Oklahoma reduce rates so that Mid-Continent refiners can compete with refineries in the Indiana and Illinois territory that are on crude oil pipe lines. Four railroads were represented in the conference here with Mr. Reeser. They were the Santa Fe, Frisco, M. K. & T. and Rock Island.

The executives stated that they cannot reduce rates enough to enable Oklahoma refiners to compete with pipe line transportation of crude oil, but they admitted that the construction of gasoline lines would place Oklahoma refiners on a more permanent and prosperous basis and said they would not further oppose the building of such lines.

As stated, the victory was a partial one. Other carriers must be seen besides these four. Some opposition is expected still from at least one road, Mr. Reeser said, and it is possible that the route of the pipe line will be changed if the consent of all railroads is not obtained. The tentative plans called for construction from Okmulgee, Okla., to Milwaukee.

This past week Frank Phillips, president of the Phillips Petroleum Co., confirmed reports that his company plans the construction of a line from the Amarillo territory eastward, through Kansas and into territory served by the Phillips in a marketing way.

The Phillips Pipe Line Co. has been incorporated in Delaware to lay an eight and 10-inch line. It will be between 800 and 1000 miles long and will cost an estimated $12,000,000. Details are lacking as to its destination. It was announced that it would be equipped to handle crude oil, natural gasoline and refined gasoline. Unconfirmed report is that a refinery might be located at the eastern end of the line.

There have been no further developments in the "mystery" pipe line, incorporated by the engineering firm of Ford, Bacon & Davis. Survey has been made from Glenpool, Okla., to St. Louis for a 10-inch crude oil line. It is commonly supposed that the Standard Oil Co. of New Jersey is back of this project. Reports from Springfield Mo., where the Ford Bacon & Davis firm has opened an office, are that a large fleet of trucks has been unloaded.

A. C. Fruehauf, Trailer Founder, Dies

DETROIT, May 13.—August C. Fruehauf, chairman of the board of directors of the Fruehauf Trailer Co. here, died May 11 after an illness of several months. He was 62 years old. Funeral services were to be the afternoon of May 14.

Mr. Fruehauf was among the first to manufacture motor trucks. His small shop on Gratiot Ave., Detroit, opened in 1895 for the building of wagons, continued in business when the motor truck displaced the horse. In 1914 he designed and built a two-wheel platform vehicle for light motor trucks which he called the semi-trailer. This is considered to be the first semi-trailer, according to L. C. Allman, sales promotion manager of the company.

On July 25, 1929 Mr. Fruehauf became chairman of the board. His two sons, Harvey C. and Harry R. Fruehauf, were elected president and vice president respectively.

Cooling With Gas, as Well as Heating, Urged as Subject for Development

By William F. Lowe
N. P. N. STAFF WRITER

NEW ORLEANS, May 8

HAVING put a greater stress on the mechanical side of the gas business than ever before, the annual convention of the Natural Gas Division of the American Gas Association was a success from the field man's angle. It is not meant to imply that the marketing end of the business was slighted. Rather, it is suggested that there was considerably more discussion on field methods and transportation, both in and outside the regular sessions, than has been usual in previous conventions of recent years. Domestic gas sales and public relations received their due amount of attention but interest seemed to center largely on future supply and distribution.

The meeting was held in the Roosevelt hotel of New Orleans from May 5 to 8 inclusive and was attended by nearly 600 delegates. The gas men present represented all of the major gas divisions of the country, both engineers and marketers, and the discussions of the various phases of the industry were not restricted to the official papers.

Outlining the work of the research committees, H. C. Morris of the Dallas Gas Co., chairman of the Natural Gas Department of the Association, brought out a point that caused considerable comment because of its suggested possibilities. In his discussion of the difference between the winter and summer loads of the large domestic gas lines, he accented the need for increasing the latter and a more equal load factor the year round Mr. Morris said in part.

"As a general proposition the older natural gas companies have quite naturally developed the use of gas for house heating. But since the daily demand of the domestic consumer on the coldest winter day is approximately five times his average daily demand, and from eight to ten times his average summer demand, the result is a very unequal seasonal load. We all realize that a Utopian situation in the distribution and sale of natural gas would be to obtain, as nearly as possible, a 100 per cent annual load factor.

"The present developed uses of natural gas do not afford a summer market in any respect equal to the winter demand. This brings us to the question of what further uses we can find for our product in the household during the summer months. Some progress has been made along this line in the development and marketing of gas refrigeration, but as the use of gas for this purpose is estimated at not more than five per cent of the demand created by the heating load, obviously we must work in other directions for the answer. Taking inspiration from the use of gas for refrigeration, this suggestion presents itself. If the heating load created our winter peak, why not use gas for summer cooling and in a large measure fill in the summer valley?"

"E. D. Miliner, the industrial research representative of the American Gas Association, very aptly pointed out the advantages and the possibilities of such a development. He states that research is now under way to determine the fundamental factors with greater accuracy and to develop mechanical equipment and cooling media that will be reliable and that can be operated simply. He further states that research of this character has the endorsement of the A. G. A. acting for the gas industry, and that the executive board of that organization has instructed a committee on industrial gas research to lend every encouragement to its energetic prosecution."

"Many of us are familiar with the time and money that have been required to develop the gas refrigerator and are hopeful that a house cooling unit may be developed in a much shorter time.

"If it is possible through the activities of the research department to develop such off peak uses for domestic gas, then the entire revenue derived from such uses, less the cost of the gas purchased, will be correspondingly reflected in a similar increase in the net revenues of the industry."

In contrast to the report of Mr. Morris are a few statistics taken from the paper prepared by W. S. Yard, vice-president in charge of gas construction and operation of the Pacific Gas and Electric Co., of San Francisco. While the former was seeking new uses for gas already on the market, the latter gave some rather startling figures on the amount of natural gas that is being wasted in the California fields. The accompanying table and comments are extracts from the paper of Mr. Yard on Natural Gas Developments on the Pacific Coast.

"There are 48 oil fields in California all being located in the southern half of the state. Of these, 36 produce amounts of gas worth considering. The major fields are Santa Fe Springs, Long Beach, Huntington Beach, Ventura, Midway-Sunset, Kettleman Hills and Elwood.

"The accompanying table for the month of January 1930, shows the production of each of these major fields, the combined production of the other 30 fields and the total for the state. Figures for quantities used for various purposes in the field, plant shrinkage etc., are not included.

"Twenty-seven per cent of the gas produced was sold to gas utilities for transportation to and distribution in cities and towns, whereas the amount blown into the air during the month was 43 per cent of the production. It is this enormous waste of almost 23 billion cubic feet per month, or 760,000,000 cubic feet per day, that has caused the great interest shown and the effort of the state officials major oil companies and gas companies to reduce this loss.

The value of this wasted gas is approximately $2,000,000 per month at the present time. Only dry gas is wasted, however, as all production in the state containing gasoline is treated in absorption plants, the yield for the month in question is about 70,000,000

California Natural Gas Statistics For Month of January, 1930

(Thousands of Cubic Feet)

Field	Production	Repressuring and Storage	Cold to Gas Companies	Wasted to Atmosphere
Huntington Beach	1,098,000	64,000	239,000	16,000
Long Beach	7,456,000	0	2,410,000	1,284,000
Santa Fe Springs	18,749,000	250,000	2,367,000	12,096,000
Ventura	5,545,000	0	3,533,000	775,000
Kettleman Hills	10,868,000	23,000	2,228,000	7,789,000
Midway-Sunset	2,152,000	51,000	777,000	168,000
30 Other Fields	744,000	0	133,000	436,000
Total	46,612,000	388,000	11,687,000	22,564,000
Daily Average	1,500,000	12,500	377,000	728,000

gallons for the 139 plants operating."

Mr. Yard discussed the gas conservation law and stressed its value if it is properly enforced. Over-production in the Santa Fe Springs field brought conservation of oil but due to the split ownership in this area it has been difficult to conserve gas.

Among the more technical papers presented, that of E. L. Rawlins, Natural gas engineer of the U. S. Bureau of Mines, at Bartlesville, Okla., represented the most comprehensive study of gas fields. This paper covered various methods of estimating future natural gas reserves, recoverable gas, gauging gas well capacities and the effect of water on the availability of gas. Mr. Rawlins has made actual field studies in a large number of gas areas and was prepared to offer some concrete examples of the findings of his department. The complete report however, will not be ready for publication for another year.

In concluding his paper Mr. Rawlins summed up the activities of the research committee and outlined their future plans. He said "It has not been possible, with the present progress of the study of gas well gauging, to give a complete and detailed discussion of gas fields especially in regard to the availability of gas.

"The many variations in operating conditions and in the actual fundamental differences in the different fields need further intensive study. The open flow committee of the natural gas department of the American Gas Assoc., now has a problem which if broadened and studied carefully and intensively, should give valuable information regarding all phases of the natural gas production.

"The fundamentals of actually gauging gas well capacities not only to determine production under open flow conditions but under any conditions of pressure, will apply to such problems as the availability of gas, storage of gas in depleted sands, control of gas wells, estimation of gas reserves, and to many other problems that are important in the gas industry."

New Map of Fields, Pipe Lines and Refineries

CLEVELAND—A new wall map of the United States, size 74 by 46 inches, scale 42 miles to the inch, showing oil fields, pipe lines and refineries, has been published by the International Map Co., 90 West St., New York.

The publishers announce that in the compilation of the map, which extended over several months, they had the cooperation of practically every oil and pipe line company in the country. Fifteen large-scale inset maps show the detail in the more important and congested producing and refining centers. The scale in the inset map varies from 5 to 24 miles to the inch.

Location, area and names of oil fields are printed in green on both the main and inset maps, based on data from oil companies, state departments and so on. Routes of pipe lines and owners names are printed in red. A black star is used to indicate each town in which one or more refineries are located.

Township and range numbers are placed within and along the border of each public land state, to aid in locating new producing areas as they are brought in.

Northern Calif. to Get Gas From Kettleman Hills

LOS ANGELES, May 8.—Gas wells in the Buttonwillow field, in the lower San Joaquin valley, are to be shut-in and natural gas for distribution in the northern part of California will be supplied from producing wells on the north dome of Kettleman Hills.

This agreement just made by the State Railroad commission between Pacific Gas and Electric Corp., a public utility company serving central and northern California, Standard Oil Co. of California and Milham Exploration Co., will tend to conserve gas, both at Kettleman Hills and Buttonwillow as the latter field produces only dry gas and can be shut-in without difficulty. Kettleman Hills is now producing far in excess of the total pipe line capacity from the "Valley" to the bay area of San Francisco and neighboring communities.

P. G. & E. has a natural gas line to Buttonwillow, that was built before development of the north dome of Kettleman Hills, and has been taking approximately 15 million cubic feet per day to supply its northern pipe line. This quantity now will be supplied from Kettleman Hills and additional development of Buttonwillow will be held up until such time as additional natural gas production is needed.

In a recent announcement it was stated that Standard Oil Co. through its subsidiary, Pacific Public Service Corp., will aid in constructing a natural gas pipe line from Kettleman Hills to southern California.

Pacific Lighting Corp., holding company for Southern California Gas Co. has acquired a 10 per cent Class B voting stock interest in the Pacific Public Service Corp. and is reported to have received an allotment of one third Standard's natural gas production from Kettleman Hills.

With the completion of the pipe line during the coming year Kettleman Hills and Elwood natural gas will be distributed in the Los Angeles basin and prevent any shortage that might result from inadequate supply from the southern California fields. It has been estimated that an additional 92 million cubic feet of gas will be needed during the winter of 1930-31 in the southern part of the state in excess of the past winter's production and that present gas production would fall short of the demand by about 175 million cubic feet during the following year.

H. L. Doherty Awarded Medal

NEW YORK, May 8.—The 1930 Walton Clark medal for valuable work in the development of the manufactured gas industry has been awarded to Henry L. Doherty and will be presented to Mr. Doherty May 21 at exercises at the Franklin Institute at Philadelphia. The Walton Clark medal is awarded each year after recommendation by a group of experts appointed from the 60 men in the institute's committee of science and arts. It has world-wide recognition.

Oregon Basin Claims Approved by Senate

WASHINGTON, May 12.—With unexpected expedition the Senate within the week has passed a bill, S. 317, introduced by the late Senator Warren of Wyoming on April 22, 1929, authorizing Secretary Wilbur to grant oil and gas prospecting permits to the Oregon Basin Oil & Gas Co. under Sec. 19 of the national leasing act of 1920, notwithstanding the right of the oil company to permits expired in August 1920 while it was trying to get patents on placer claims in the Elk Butte and Wiley structures in the Oregon basin of Wyoming.

On account of the danger of drainage, reported by the Department of the Interior, the committee recommending the bill asserted that "the matter appears to be one of emergency calling for prompt action by Congress."

This emergency matter has been pending since 1928 in an active state and in not so active a state, before the executive branch of the government since 1922. A bill such as the one reported and passed was passed by the House of Representatives in the last Congress but failed to get through the Senate before the last Congress died. The bill proposes that Secretary Wilbur shall give permits on 800 acres instead of the 1600 acres claimed by the oil company which pioneered in the basin and by the expenditure of $200,000 showed that there was oil and gas in the basin, work having been begun in 1912. The company thought it had earned patents on 1600 acres and, in obedience to an order of the General Land Office, paid $2,000 for the land claimed by it.

Transportation Men Fear Increases in Truck Sizes Will Cause Trouble

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, May 10

WHILE problems of overproduction vex the producing department and the refining, low prices pester the sales division and renewals and rentals keep the land men out of mischief, the transportation division of the oil company goes along having just as much trouble as any of them.

State police grab trucks just across a state line and order them to drive upon the scales. It may develop that the load is in excess of that permitted by the law, although it was well within the allowance of the state where the load originated. Or the truck and mayhap trailer are longer or wider than the statutes of one state prescribe but are all right in another.

Irate citizenry raise a fuss about trucks on the highways, oil company equipment included. They go too fast and are dangerous or they go too slow and impede traffic. Legislatures are petitioned to do something about it.

These and many more questions were discussed in a two-day meeting of the central committee of the American Petroleum Institute division of transportation in Tulsa, May 5 and 6. Some 40 superintendents and assistant superintendents of automotive equipment for oil companies, representatives of truck and tank companies attended. Chairman Roy F. Fike, superintendent of automotive division of the Mid-Continent Petroleum Corp., presided and the meetings went off in businesslike fashion.

Entertainment features consisted of a dinner the evening of the first day given by the B. F. Goodrich Rubber Co. and luncheon the second day at which the Leland Equipment Co., who handle trailers and other automotive equipment, was the host.

While the problems of maintaining efficiency in automotive departments are numerous enough, covering everything from maintenance to the question of trying to get the advertising department to pay for company signs put on tank wagons, there is a public question that is occupying the minds of transportation men. Attention was fixed upon it by Frank A. Jones, superintendent of transportation for the Shell Petroleum Corp., St. Louis.

Mr. Jones asserted that the present trend of increase in the size of tank wagons and trailers—automotive gasoline trains now so popular—will mean legislation within a year or two that will put them all off the road. He said the companies are facing such hostile action in Illinois right now and in at least three other states public sentiment is aroused. He said he would not be surpised if the companies operating in Illinois find themselves restricted to not more than 1500 gallons per load, regardless of whether four or six-wheel units are employed.

At the last session of the legislature in Illinois there was a proposal by one member to limit the length of a tank wagon to 28 feet. This member was infuriated because he had driven 14 miles behind a gasoline train about 54 feet long, trying all the while to get around it.

Mr. Jones' idea was that oil companies should take stock of the situation right away. He made no recommendations as to action to be taken.

Chairman Fike distributed copies of the so-called Hoover code of highway regulations and asked members to study it. He said the chief problem in this territory is that of weights and speeds, due to the differences in state laws. The crossing of state lines is unavoidable in the hauling by all the larger oil companies. Mr. Fike thinks the American Petroleum Institute can be of great service in fostering uniform legislation that will enable oil companies to know where they stand in any state.

It was agreed to study the Hoover code and the driver's manual that was recently prepared by the Indian Territory Illuminating Oil Co. and to discuss this subject further at the next meeting of the central group, which will be held in Tulsa, Sept. 2 and 3.

In connection with the suggested activity of the A.P.I. it was emphasized by several members that the transportation division, as now constituted, is not giving the automotive branch the attention it needs and a resolution was adopted asking the A.P.I directors to establish this branch as an independent committee. Members said that the present arrangement mixes up the tank car and pipe line questions with those of the automotive divisions of an oil company.

Among marketing questions taken up the first day was that of automotive route studies. H. E. Spear, of The Texas Co., said that he had suggested to the Ohmer company that it devise a new type of truck recorder that would give time, speed and delivery all on one printed record and would be beyond the control of the driver. This provoked some debate. Some took the position that more emphasis should be put upon the selec-

Left to right W. M. Gadberry, Columbian Steel Tank Co., Kansas City; Charles H. McBurney, Transcontinental Oil Co., Tulsa; Jack Parker, Trailmobile Co., Houston and J. H. Bayle, Davis Welding & Manufacturing Co., Houston

S. C. Bovell, Magnolia Petroleum Co., Dallas; J. O. Maxwell, B. F. Goodrich Co., Tulsa; S. C. Phillips, Sinclair Oil & Gas Co., Tulsa and W. A. Dewey, Sinclair Refining Co., Kansas City

tion and training of the driver rather than on mechanical governors for him. One said that too often drivers are chosen in a country district because they are supposed to control some gallonage and they may prove to be highly incompetent.

It was agreed that combination city and country routes are productive of inefficiency unless close supervision is maintained. The problem in this regard is to make the most effective use of the equipment on hand, traveling it as many miles as possible. The combination route in the hands of an indolent driver defeats this purpose. He is always in a rush to get back into town and neglects his country route.

Mr. Jones, of the Shell, told of an experiment his company had tried. The automotive division rented tank trucks to the marketing department on a flat rate per day which was obtained by averaging the cost records over a six-year period. The automotive division paid all operating costs except the drivers' salaries. This put it up to the marketing division to get the maximum travel out of the trucks.

There was the restriction imposed that abuse of equipment would result in the discharge of the driver. In the marketing division where this was tried out it was found presently that 19 trucks did the work that 25 had been doing. The rental figure given by Mr. Jones was $6.85 per day on a two-ton truck with 700 gallon tank.

One other virtue of the plan is that it enables the marketing department to set up its cost record promptly at the close of a month.

The economics of automotive bulk hauling brought out decided opinion that the limits to which this can be pushed, in competition with rail hauls, are pretty narrow. W. R. Styron, of the Humble Oil & Refining Co., said that the oil companies had been public benefactors. By the introduction of equipment for lengthy hauls they had set the railroads to thinking and the rates are beginning to come down. He asserted that unless there is a wide margin between rail rates and hauling costs, it is hazardous business. Mr. Spear, of the Texas Co., said all that the showing of economy proves is that rail rates are too high. He warned against systematic attempt to take the business away from the railroads. They have considerable power and can be expected to retaliate.

Oil companies lease most of their bulk storage sites from the railroads, usually at low cost. The railroads can be counted on to eject them from these sites at points where all hauling is done by tank truck. Then the railroads can be quite powerful in stirring up legislation limiting the use of tank trucks.

Considering the public dissatisfaction with the obstructions to travel imposed by these trucks, it would not require much agitation, he thought. He asserted that it is not possible to compete with the tank car today. There are many points in the country where rail rates are too high and a good showing of economy can be made there, but it merely demonstrates that the rates should be reduced.

Inter-company departments have their little differences of opinion. For instance, the automotive men feel they have been imposed upon by being charged for the paint which goes into putting company names and other advertising matter on trucks. A resolution was adopted urging oil companies to allocate this charge to advertising and not to maintenance, as is the present general practice.

The aluminum tank, now attracting much attention, came in for lengthy discussion. It developed that there has been a "whispering campaign" against it; nobody knew just where that movement started. From the facts that had been developed, members of the central group were favorably disposed toward aluminum.

Of prime importance, considering the weight limits imposed by state laws, is the increase in the pay load

Frank A. Jones, Shell Petroleum Corp., St. Louis; W. R. Styron, Humble Oil & Refining Co., Houston; C. E. Jackson, Mid-Continent Petroleum Corp., Tulsa; Roy F. Fike, Mid-Continent Petroleum Corp., Tulsa and H. E. Spear, The Texas Co., Houston. Mr. Fike is chairman of the central committee

with the same gross weight by using aluminum. Principal testimony was supplied by Mr. Spear, of The Texas Co., which has one unit in service. It is of 2400-gallon capacity and has been in operation since the first of this year. There has been no trouble of any kind, Mr. Spear said. The aluminum is gradually getting darker—it had a clear Duco finish—but all that will be necessary will be to rub it out with steel wool.

He told of a test made on the Pacific Coast when hydrostatic pressure was put on an aluminum tank which carried it to destruction and there was no rupture at the weld, the point where many have feared trouble would develop. W. A. Dewey, of the Sinclair Refining Co., said it is his opinion that the aluminum tank should give longer service than steel. It will not pit and shouldn't "crystallize" as greatly as steel.

Some testing of aluminum tanks has been conducted but the general opinion of the central group was that the performance in service will constitute the decisive tests. A resolution was adopted asking the National Fire Protection Association to note the widespread interest in this type of equipment and to assist in getting at the facts on performance.

Considerable discussion on dual and balloon tires for trucks was had at the close of the meeting. There is pronounced trend toward the use of balloons. S. C. Phillips, of the Sinclair Oil & Gas Co., reported trouble in the use of duals, particularly on dirt roads over which so much of the oil country traffic must pass. Others took the view that such roads will before long be broken for the dual tread, affording a path for the wheels that will enable travel on as easy terms as is now afforded by the single wheel and the narrow rut.

Atlantic to Install de Florez Units

CLEVELAND, May 12.—The Atlantic Refining Co. has just closed a contract with the M. W. Kellogg Co. of New York, for the construction of four de Florez vapor phase cracking units, to be erected at its Point Breeze refinery near Philadelphia.

The total cost of the units will be in the neighborhood of $2,000,000; they are designed to produce 4000 barrels of anti-knock gasoline per day from heavy residual oils, and will be the first large commercial installation of the de Florez process outside the Texas Co., which controls the process. The Texas Co. is reported to be building several of these units in its own refineries, to be completed this year, their total capacity being about 5000 barrels of gasoline per day.

The first commercial unit of this type was erected in 1927, and has been operating on heavy Venezuela crude for more than two years, operating continuously for periods of 1000 to 2000 hours before cleaning. Details of the process will be found in NATIONAL PETROLEUM NEWS for April 24, 1929, page 75, and Dec. 4, 1929, page 33.

Shell Refinery Planned At Vancouver, B. C.

TORONTO, Ont., May 10.—Plans are going forward for a large refinery which the Shell Oil Co. of British Columbia proposes to build on a waterfront site in Burnaby municipality, adjoining Vancouver, B. C. It is unofficially reported that the project will mean the eventual spending of $4,000,000 on construction of the refinery and of the ocean and railway terminals which are a necessary part of the undertaking.

Construction will proceed as soon as negotiations for a 70-acre site in North Burnaby are concluded between the municipality and the company, C. E. Anstie, general manager for the Shell interests, announced. The project will necessitate the erection, in addition to refining equipment of ocean and railway terminals.

Reeve Pritchard stated that the proposal is the purchase for $15,000 of 70 acres of land from Burnaby Municipal Council and the Provincial Government and an additional block of land from a private owner.

The property fronting on Burrard Inlet, Vancouver's great natural harbor, is about one mile nearer the city than the present Shell plant on the waterfront at Barnet. The site is about seven miles from the City Hall and three miles east of the Second Narrows bridge across the harbor. A committee of the Burnaby Council is carrying on negotiations with the Shell company which desires a fixed assessment for taxation purposes on the proposed industry extending over a period of years and the transaction is made conditional upon the securing of riparian rights for ocean terminals. Opening up of necessary roadways and provision for water supply are also requested.

Twenty Oil Companies Win Navy Fuel Oil Contracts

WASHINGTON, May 10

CONTRACTS for 7,248,600 barrels of fuel oil for the use of the navy in the next fiscal year have been let by the Navy Department it was announced May 8. Twenty oil companies participated in the awards which totaled $6,668,700.

The largest contract from a dollar standpoint was awarded to the Union Oil Co. amounting to $1,724,377 for 1,809,000 barrels for west coast delivery. The Texas Co. was awarded a contract for 2,000,000 barrels at $1,392,000. Magnolia Petroleum Co. got a $1,008,170 contract for 987,500 barrels.

The following tabulation gives the contracts in detail:

Fuel oil, Grade C, east coast navy yards and stations:

	Barrels	
Magnolia Petroleum Co.	987,500	$1,008,170.00
Mexican Petroleum Co.	145,000	188,437.50
Shell Eastern Petroleum Co.	42,000	63,300.00
Cities Service Refining Co.	75,000	109,125.00
Standard Oil of Ky.	67,000	15,750.00
Beacon Oil Co.	60,000	75,000.00
Maritime Oil Co.	147,500	165,475.00
Gulf Refining Co.	660,000	930,960 00
Total	2,184,000	$2,556,217.50

Fuel oil, Grade C, west coast navy yards and stations:

	Barrels	
The Texas Co.	2,000,000	$1,392,000.00
Shell Eastern Petroleum Co.	700,000	374,500.00
Hancock Oil Co.	300,000	177,000.00
Richfield Oil Co. of Calif.	10,000	18,400.00
Standard Oil Co. of Calif.	4,000	4,400.00
Union Oil Co.	1,809,000	1,724,377.00
Total	4,823,000	$3,690,677.00

Fuel oil for diesel engines, east coast yards and stations:

	Barrels	
Gulf Refining Co.	2,500	$5,250.00
Tide Water Oil Co.	22,000	46,000.00
Shell Eastern Petroleum Co.	2,500	5,495.00
Atlantic Refining Co.	30,000	75,348.00
Warner Quinlan Co.	4,500	10,678.50
Cities Service Refining Co.	10,000	13,100.00
Maritime Oil Co.	8,500	15,300.00
Beacon Oil Co.	13,000	32,630.00
Standard Oil Co. of N. J.	39,500	88,404.00
Total	132,500	$292,205.50

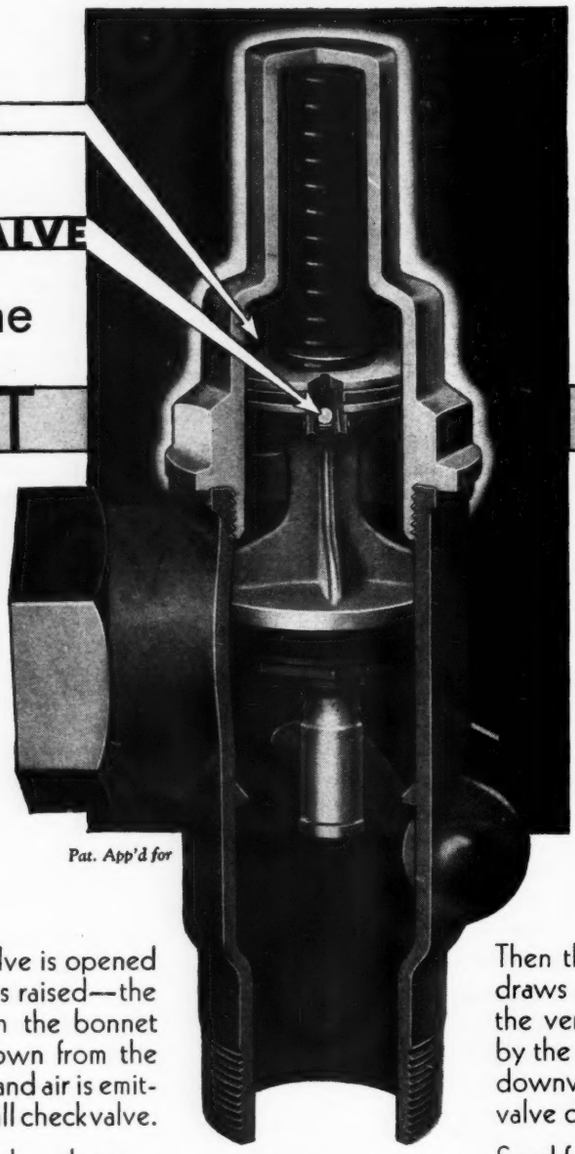
Fuel oil for diesel engines, west coast yards and stations:

	Barrels	
Union Oil Co.	20,000	$28,800.00
Standard Oil of Calif.	600	1,134.00
Richfield Oil Co.	88,000	98,845.00
Associated Oil Co.	250	420.00
General Petroleum Corp.	250	395.00
Total	109,100	$129,594.00

NEW BONNET

with
BY-PASS
and
BALL CHECK VALVE
gives you the

SOFTEST CLOSING LOADING VALVES ever known



Pat. App'd for

As the loading valve is opened —as the plunger is raised—the compressed air in the bonnet forces the ball down from the small escape vent, and air is emitted through the ball check valve.

As the loading valve closes— as the plunger goes down— suction in the bonnet is relieved through the by-pass, until the loading valve is almost closed.

Above is shown a cut-out view of the Wheaton Type 25, designed for the effluent end of the line. Type 26, for mid-line location, is also made with this improved bonnet.

Then the suction in the bonnet draws the ball up and closes the vent. The vacuum created by the plunger in completing its downward stroke prevents the valve closing with a bang or jar.

Send for samples. Test them for 60 days. If you are not convinced that they are the softest self-closing valves ever made, return them for full credit or refund.

A. W. WHEATON BRASS WORKS, NEWARK, NEW JERSEY

Empire Brass Mfg. Co., Ltd., London, Ontario, Canadian Manufacturers and Distributors

Wheaton

FAUCETS · VALVES · JOINTS · COUPLINGS · FILLERS · NOZZLES · FITTINGS

New Texas Field, Producing From Lava, Is Promotion Paradise

By Paul Wagner.
N. P. N. STAFF WRITER

TAYLOR, Texas, May 8,

FOR the fifth time in the history of the petroleum industry, commercial oil production has been found in beds of decomposed lava associated with a volcanic neck, or plug.

The present find is known as the Chapman field, six miles south of old Thrall development in Williamson county, south central Texas, where the first production of this character was discovered in the United States more than 15 years ago.

Lytton Springs and Dale, two Caldwell county fields in the general south central Texas region, are the only other sources of domestic oil production from serpentine beds. Only Lytton Springs has, as yet, proved profitable on a payout basis of such fields found in this country.

Outside the United States, the only commercial oil yielded by serpentine has been from the old Furbero field, in the canton of Papantla, northern Vera Cruz, Mexico. There, small quantities produced as early as 1870 constituted the original oil production of the Aztec republic. Small quantities have also been exploited more recently, incident to the reopening of an area that was long abandoned for development.

Two or three test wells drilled years ago on the island of Cuba, which were reported to have showed for eight to 15 barrels daily oil production, were believed to be in serpentine at completion depths. They were, however, never regarded generally as commercial wells.

Largely because of the disfavor in which serpentine plugs are held by the more substantial operators, and perhaps reflecting also the general economic aspects of the producing industry, the Chapman field of Williamson county still has no outlet for production, notwithstanding its discovery in January of this year.

There stand completed in the field, but not exploited, an even dozen wells producing from serpentine levels of 1400 to 1850 feet; depth depending on location with regard to dip of bedding planes and with reference to faulting across the structure. As serpentine is not a source rock, the oil probably has migrated from the Taylor Marl or deeper Edwards limestone horizon of the region.

Conservative estimates place the field's present potentiality at 3000 barrels daily maximum for 11 older wells and possibly 5000 barrels the first 24-hours for the "Andy" Anderson current completion on the Lawrence farm. The Anderson well filled two 500-barrel flow tanks in three hours and 10 minutes before pinching-in after its completion last week.

First reports credited the E. L. Chapman discovery well, in February, with 5000 barrels initial production. It is now rated a 160-barrel well. Chapman's six other wells in the field are estimated by scouts familiar with their behavior at completion time and since as good for 350 to 400 barrels together.

Two Chapman field wells belonging to E. W. Marts are estimated good for 1250 barrels daily, one for 1000 barrels and the other 250 barrels, at their maximum. Two wells of Roy A. Westbrook & Co., of Fort Worth, are similarly rated good for 200 barrels together.

The flashy initial values of the two or three big wells in the field remind old-timers among Texas operators of the original days of Thrall development. Then, the discovery well came in for a big flow and others tested sufficiently good to bring about boom conditions. Thrall was a new condition, both as regards the area of discovery and the character of the pay horizon.

A considerable number of wells were drilled before they could be opened up and the oil marketed. Then the decline was almost overnight, operators folding their tents and slinking away with what heart they could muster.

History records the initial production of 70 wells in the original Thrall development area as follows:

Barrels Initial Production	Number Wells
5000-1001	7
1000- 201	15
200- 41	22
40- 9	19
8- 1	7

The average decline of original Thrall production for 79 wells in a 15

Refinery Analysis of Chapman Field Crude, Abbot Discovery Well, Williamson County, Texas

(Charge—1000 cc sample to two-liter flask equipped with Hempel column, 1½" x 14" with ¼" lengths of glass tubing. Distillation rate of 10 cc per minute maintained. After recovery of gasoline the column was removed and the remainder of the distillation made under absolute pressure of from 40 to 10 mm.)

DISTILLATION:

Per Cent Crude	Vapor Temp.	Oil Temp.	Grav.	Grav.	Gasoline
I. B. P.	70				Gravity 55.5
5	202				Doctor—Nearly sweet
10	252				
15	290				Odor—good
20	340				Color—plus 30 percent of
25	392				sulfur—0.05
28.8%	425		55.5	55.5	I. B. P. — 124
	Absolute pressure 40 to 10 mm.				10 — 188
34.3		408	41.8		20 — 222
38.3		420	40.8		30 — 248
43.3		455	39.0		40 — 266
48.3		490	37.8		50 — 290
53.3		535	36.5		60 — 314
58.3		560	34.9		70 — 336
63.3		600	33.2		80 — 358
68.3		635	31.9		90 — 390
73.3		662	30.1		E. P. — 437
78.3		700	Wax		Per cent Recovery —
79.6		715	Wax	33.8	97.5
18.6 residuum				20.9	

RECAPITULATION:

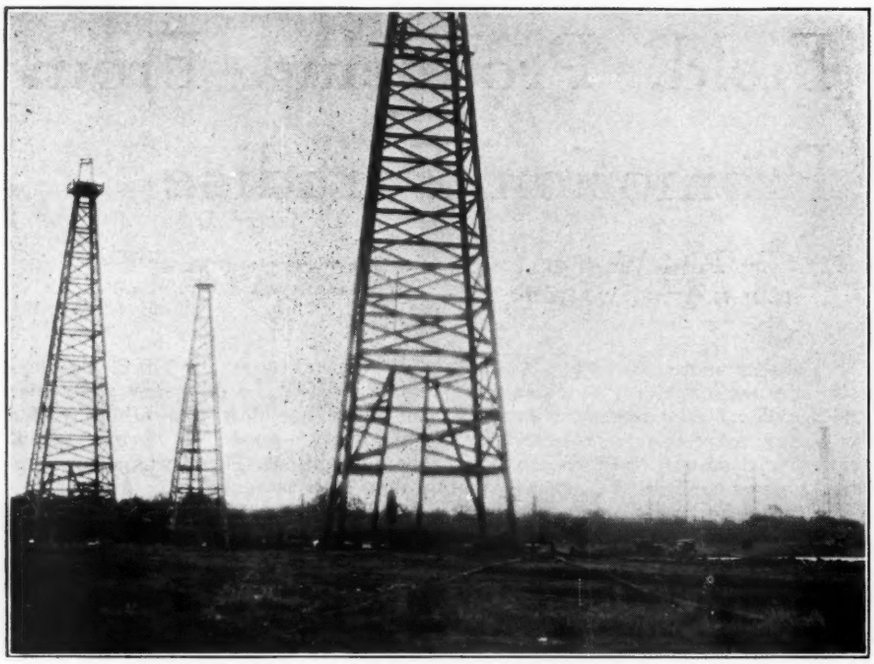
Crude—
Gravity—34.2° A. P. I.
Color—Dark green
B S & W—0.1%
Odor—Good
Pour—50° F.
Per cent sulfur—0.212

28.8 per cent gasoline:
Gravity—55.5° A. P. I.
I. B. P.—124
E. P. 437
Doctor test—Nearly sweet
Color—plus 30
Odor—good
Per cent sulfur—0.05

9.5 per cent kerosene:
Gravity—41.1° A. P. I.
Color and Odor—Good
Doctor Test—Nearly sweet
Per cent sulfur—0.051

41.3 per cent gas oil:
Gravity—33.8° A. P. I.
Color—3½ N. P. A.
Pour Point—85° F.
Per cent sulfur—0.104

18.6 per cent Residuum
Gravity—20.9° A. P. I.
Pour Point—Solid at room temp.
Per cent sulfur—0.221



"Andy" Anderson "Big" well in Chapman field in foreground; drilling tests and promotion derricks in background

months period is shown in the following figures: at the end of the first month, they made 51 per cent as compared with the 100 per cent rating of initial yields; end of four months, 17 per cent; end of nine months seven per cent; end of 14 months, one per cent.

Lytton Springs, the second Texas discovery of oil from serpentine beds, proved an exception to this type of production when it came into the yield column in 1925. At the time the first seven wells had been completed, April 15, 1925, a compilation published in this periodical[1] showed them averaging 516.4 barrels, open flow production. The next three wells completed brought the average down to 429.3 barrels and the finishing of a total of 16 wells found the average 243.7 barrels.

When 51 wells had been finished, by the middle of May, 1925, the Lytton Springs production average had declined to 163.8 barrels daily and the completion of 81 wells, May 23, found the average 118.9 barrels per well daily.

Present total production of the Lytton Springs field is approximately 900 barrels from upwards of 200 wells; but for comparative purposes the present recovery may be regarded as smaller, for the reason that the nearby Dale development came along afterward and production statistics for the two areas are now included together.

There are only a handful of test wells actually drilling in the Chapman field, although the total number of derricks seen by a visitor there exceeds 40. There are the dozen completed wells, of course; a scattered bunch drilling and the remainder of the derricks represent, for the most part, the early stages of stock promotion activity.

The Chapman field is a promoter's paradise. The wells may be completed through the easily drilled formations to the 1400-1850 foot levels at prices varying from $5500 to $6000 each. Contract drilling costs $1.75 a foot, the hole is started with 10-inch casing and the well is finished with 6-inch or 6⅝-inch casing. The cost prices mentioned will cover all equipment expense.

When a well hits the pay, the flashy production "poops" into the derrick long enough, at least, for the camera man to take the pictures that successful promoter needs to supplement his stock sales literature. If the oil doesn't flow into the derrick it is a simple expedient to place a "shot" of nitro-glycerin for the purpose of rectifying nature's crankiness.

There are no nearby pipeline facilities, hence Chapman field operators are awaiting the time when someone builds a loading rack and gathering system for shipments in tank cars. Such shipments may be made from Thrall, 11 miles distant, on the International & Great Northern (Missouri Pacific) railroad, or from Taylor, nearly 25 miles away, on the Missouri, Kansas & Texas railroad. The small quantity of crude now produced in the old Thrall field is handled in tank car shipments.

Chapman field crude, which tests 34.2 degrees, A.P.I. gravity compares favorably in high gasoline recoveries with oil from other fields producing from serpentine. Color of the crude is dark green, its odor good and the b.s. and water content only 1 per cent A detailed refinery analysis of Chapman crude, made from a sample of oil taken from the Abbott discovery well, is published herewith.

For comparative purposes, a refinery analysis of crude from the F. A. Gomillion property at Lytton Springs showed 26.3 per cent of 59.6 gravity gasoline; 20.3 per cent of 42.2 gravity kerosene, under atmospheric distillation.

Vacuum distillation at 40 mm showed in the Lytton Springs test a recovery of 10.3 per cent gas oil of 35.6 gravity 13.6 per cent of 32.1 gravity light lubricant distillate; 5.5 per cent of 28.9 gravity medium lubricant distillate; and 24 per cent of 20 gravity residuum.

[1]National Petroleum News, page 107, June 24, 1925.

Magnolia Pipe Line Runs February and March

HOUSTON, May 8.—Magnolia Petroleum Company, pipeline department, announces from Dallas headquarters the following crude oil runs for March, which are shown in comparison with February.

	February	March
Augusta	29,607.05	32,913.77
Oklahoma City	160,744.37	310,737.98
Bright Stock	76,784.28	88,159.21
Duncan	35,320.27	35,722.21
Seminole	31,894.85	34,093.02
Cushing	88,356.94	93,720.34
Healdton	185,999.51	196,800.45
Hewitt-Graham	149,577.52	150,837.49
Walters-Beaver Creek	6,438.37	7,002.77
Wewoka	499,583.24	552,517.08
Yale	37,653.17	38,878.42
Total Okla.-Kans.	1,301,959.57	1,541,382.74
Archer	18,529 82	20,783.45
Burkburnett	60,557.11	60,692.32
Comanche	13,405.97	14,660.95
Electra	68,097.68	74,253.07
Corsicana—Heavy	8,632.81	8,664.66
Corsicana—Light	10,959.45	10,674.54
Henrietta	1,556.65	1,485.21
Iatan	13,124.42	11,719.20
Luling	245,235.18	274,081.42
Lytton Springs	26,665.71	32,473.60
Mexia-Wortham	16,404.97	18,938.39
Mirando	159,057.16	185,970.51
Olden	6,966.26	7,191.54
Panhandle	252,695.88	263,570.82
Panola	1,305.43	1,542.88
Stephens	7,667.82	7,415.09
Thrall	1,143.95	1,311.43
Crane-Upton	59,050.79	79,247.54
Glassock	42,423.69	42,728.05
Darst Creek	94,069.27	112,609.38
Shelby	.....	312.32
Winkler	42,360.71	50,363.09
Total Texas	1,149,910.73	1,280,689.46
Haynesville	5,285.63	5,924.04
Bull Bayou	29,193 24	32,507.16
Cotton Valley	22,483.93	22,839.92
Pine Island	22,481.76	25,560.18
Hackberry	6,257.59	.....
Total Louisiana	85,702.15	86,831.30
East El Dorado	3,297.35	2,934.88
Smackover	56,592.80	60,273 80
El Dorado-Rainbow	42,780.19	42,979.01
Total Arkansas	102,670.34	106,187.69
Grand Total	1,338,293.22	3,015,091.19

OKLAHOMA-KANSAS

Report for March		Dly. Avg.
Runs	1,908,973.00	61,580.00
Shipments	2,246,683.00	72,474.00
Total Stock	7,022,692.00	.....

TEXAS

Wichita, Wilbarger, Archer		
Runs	163,084.00	5,261.00
Shipments	145,809.00	4,704.00
Petrolia		
Runs	1,485.00	48.00
Shipments	1,485.00	48.00
Eastland, Stephens		
Runs	29,245.00	943.00
Shipments	.....	.....
North Central Texas Field		
Total Stock	234,159.00	.....

First of Wichita Falls District's Deep Tests Gets Under Way

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, May 8

THE first test of a series to be co-operatively drilled for deep oil production in the Wichita Falls district is about to get under way at a location just south of Red River, northeast of Electra and northwest of Clara, in Wichita county.

Deep Oil Development Co., a million dollar corporation composed of various oil operators contributing to the scheme to eventually drill 20-odd holes to the 5000-6000-foot levels, is responsible for the present location and two others that have been tentatively agreed on.

The present location is described as 300 feet west and 841 feet north from the southeast corner of the Murchison, Pigg and others lease of 164 acres. More closely described the Murchison-Pigg property is the south 164 acres of the north 238 acres of Sec. 834, D. Cowan survey, abstract 43, of the Tucker Oil Co., Wichita Falls.

It is proposed to carry the test down to 6000 feet unless oil or gas are found in paying quantities at shallower levels. Two other deep tests are being arranged under depth considerations calling for similar drilling to 5000 feet. They include arrangements with Merry Bros. & Perrini, of Fort Worth, and the Phillips Petroleum Co., of Bartlesville, for a test one mile south of Jolly and nine miles southeast of Wichita Falls. Another test is planned on the Temple-Campbell-Johnson block, north of the town of Dean, Clay county, on the Edington ranch.

Still other deep tests will be made at locations to be more definitely decided on in the future in Wichita, Clay, Archer, Young and Wilbarger counties. At least six are planned for Young county, four for Archer, three for Clay, three for Wilbarger and the rest for Wichita.

Data made public through Harry Hines of Wichita Falls, general manager of the Deep Oil Development Co., include the statement that geological investigations of the general area were "made with the idea of determining whether or not the Electra arch and Bend flexure were present as a barrier during the time in which the Arbuckle, Simpson, Viola and Hunton formations of Oklahoma were being deposited, and to what extent these formations may have been deposited in the Wichita Falls area."

The statement is further made that the recent identification of Viola and Simpson formations in North Texas obviates the necessity of a more careful discrimination between pre-Mississippian formations in order that a more definite relation may be determined between the early Paleozoic stratigraphy of Oklahoma and Texas.

Both the Viola and the Simpson formations yield prolific quantities of petroleum in the Oklahoma division of the Mid-Continent region and, parenthetically, the 8500-foot pay in the Big Lake field of Reagan county, West Texas, has now been pronounced Ordovician, equivalent in geologic age to the Lower Simpson in Oklahoma.

Reference of the Big Lake deep pay (previously called Pennsylvanian) to the Ordovician has been made by Dr. E. O. Ulrich of the United States Geological Survey after examination of cores from the half dozen completed wells.[1]

[1]NATIONAL PETROLEUM NEWS, page 57, May 7, 1930.

M. G. Cheney

B. H. Harleton of the Amerada Petroleum Corp. is credited with a similar observation and E. H. Sellards, associate director of the Texas Bureau of Economic Geology at Austin, also refers the Big Lake deep pay to the Ordovician. Mr. Sellards gives credit for the determination to his co-workers, Dr. H. P. Bybee of San Angelo and J. E. Grant.

M. G. Cheney of Coleman, Texas, head of the Anzac Oil Corp., and a widely recognized geologist, has prepared a discussion of pre-Mississippian production in north central Texas, which has been given publicity by Mr. Hines in connection with the Deep Oil Development Co.'s work.

Mr. Cheney says:

"To the oil operators of the Wichita Falls district 'deep oil' presumably means accumulations of oil in beds older than the producing sands of upper Pennsylvanian age (the Cisco and Canyon groups) which have yielded so prolifically in Wichita and surrounding counties. The oil prospects of older strata in this region are but little known at the present time.

"Some 15 years ago, most oil operators considered it useless to drill into pre-Pennsylvania rocks in Oklahoma. At the present time about three-fourths of that state's production comes from these older beds. It seems hazardous at this time to either predict a similar development for north central Texas or to say that this cannot occur.

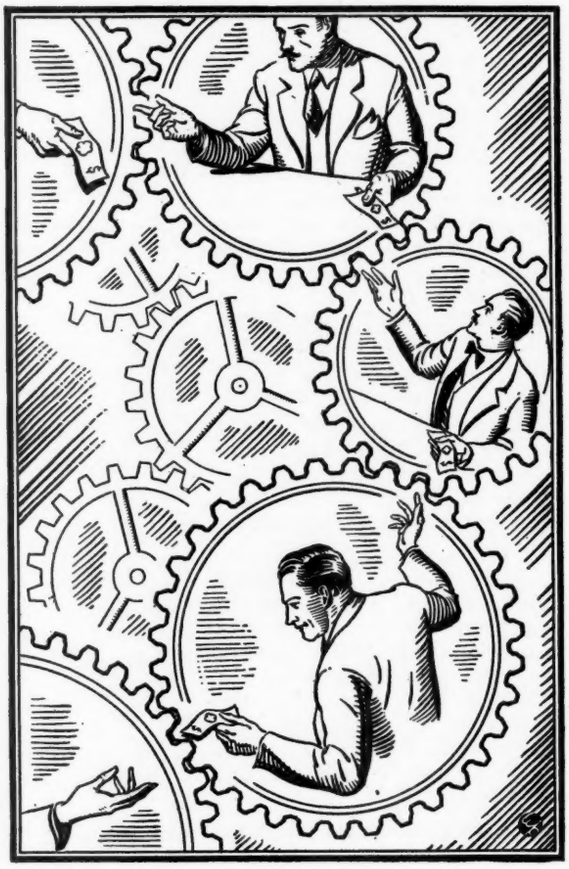
"Beginning about 60 miles south of Wichita county large oil fields have been developed from the Strawn and Bend groups and these pre-Canyon formations may harbour important oil accumulations in the Wichita Falls district, except, of course, in areas of most pronounced uplift where these beds are absent. However, from available evidence the greater prospects are thought to be in still older bed. . . .

"Evidence continues to accumulate from the study of drill cuttings and exposed rocks of the Llano-Burnett uplift of central Texas, supporting the view that the pre-Mississippian formations which have furnished such prolific oil fields in Oklahoma extend into north central Texas and offer favorable prospects for the development of oil and gas.

(*Continued on Page* 50)

ONE MAN'S SALE

is Another's Purchase



"I CLOSED the deal" exults the salesman, tossing a paper onto the sales manager's desk, "Here's the order."

Meanwhile, in another office across the city an executive reports gravely to his chief, "I believe it's a wise purchase. Here's the carbon of our order."

To one man a sale, to the other a purchase; to one firm a receipt, to another a disbursement. And so the world of business clicks along, wheel turning wheel, cog moving cog. Prosperity is born of countless transactions, each involving on the one hand the ability to sell and deliver, and on the other the capacity to buy and use. It is as important to prosperity to stimulate the *consuming* capacity of the world as it is to encourage its ability to produce.

A large part of the business paper's function is to stimulate this readiness to buy... to tell its readers of new equipment, new materials, and new processes leading to greater effectiveness in manufacture and distribution.

In this way the business paper serves a threefold purpose. It serves its readers by the counsel of that true economy which lies in spending money to make money. It serves the world by helping to keep the wheels of business moving, and it serves its advertisers by creating an active market for their wares.

By performing this function it earns the confidence of its readers; it earns its sound, paid, audited circulation, and it earns the dollars of the advertisers who use its pages.

THIS SYMBOL *identifies an A B P paper . . . It stands for honest, known, paid circulation; straightforward business methods, and editorial standards that insure reader interest . . . These are the factors that make a valuable advertising medium.*

This publication is a member of the Associated Business Papers, Inc. . . . a cooperative, non-profit organization of leading publications in the industrial, professional and merchandising fields, mutually pledged to uphold the highest editorial, journalistic and advertising standards.

THE ASSOCIATED BUSINESS PAPERS, INC.
295 MADISON AVENUE · NEW YORK CITY

Konawa Pool's Gain in Production Chief Item in Dull Mid-Continent Week

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, May 10

THE past week was one of the Mid-Continent's dullest in a long while. There wasn't a well in the territory that had anything but routine significance. Of chief interest was the meeting held in Oklahoma City on May 8 by operators in that wonder pool.

These operators are quite dissatisfied with the way proration is being handled. They intimate that not much proration is occurring in other flush and semi-flush pools of Oklahoma while the restrictions on the Oklahoma City pool are fully carried out. After adopting a resolution saying that older pools should be further restricted and more market outlet should be provided for Oklahoma City, the operators addressed a letter to C. C. Herndon, chairman of the proration committee of the Mid-Continent Oil & Gas Association, asking him to call a meeting, or hold a conference between the committee and the Oklahoma City operators.

Oklahoma City proration is now on the basis of 16 and 2/3 per cent, but is on a time basis, whereas other pools are prorated by percentages of the lease potential. In the order of the corporation commission which governs until July 1 it is provided that Oklahoma City may produce to not more than 25 per cent of its potential, provided the market can absorb that much. The pipe lines serving the Oklahoma City field name the amount of oil they are willing to take.

Actual productive capacities of all leases in the Seminole territory are now being determined by producing wide open. Some of the pools are being operated in that manner for the first 15 days of May and the rest will be gauged the last half of the month. Preliminary figures on the fields now wide open show that proration has been non-existent on some properties.

The more settled pools have been rated as to potentials by arbitrarily giving them a decline rate of three per cent each month. In many instances that was not enough and the allowed production was in excess of what the properties would actually make. That is especially true of the Mission, Maud, St. Louis and Carr City pools.

It is expected that the new figures on Seminole City, Earlsboro, Little River and Bowlegs will reveal that proration has been an actuality. It hasn't been a matter of fudging in the formerly named pools; the mechanics were at fault. They declined at greater rate than the decline curves indicated they would.

The Konawa pool, in Twp. 6-6E, southern Seminole county, figures in the news more importantly than heretofore. While still considered somewhat "flashy" in that wells probably will have a rapid decline rate, it is expected to reach an important peak of production, although governed by proration. It hit its highest figure to date in the 24 hours ended at 7 a. m. May 9 when the total output was 23,260 barrels from 46 wells. Contributing to this total were four imposing wells, as follows:

Twin State Oil Co., No. 2, SW NE NE of 20-6-6, sand 2955-62, flow 5670 barrels in 24 hours against back pressure of 100 pounds.

Burke-Greis Oil Co. No. 1 NW SW SW of 21-6-6, Cromwell sand 2876-90; shale 2890-2912; second sand 2912-16, flow 1150 barrels in 24 hours.

W. B. Pine No. 1 NE NW SW of 16-6-6, sand 2861-74, flow 4175 barrels in 24 hours.

Shell Petroleum Corp. No. 1 NW SE SE of 20-6-6, sand 2912-38, flow 4941 barrels in 24 hours against back pressure of 25 pounds.

The other principal new area in the general Seminole area is South Earlsboro. Its production on May 9 was 6106 barrels from 15 wells. It is under heavy proration. Light wells seems to indicate that the pool will not be of large areal extent.

The expansion of the drilling campaign in the Oklahoma City pool continues at a rapid rate and there are now more than 225 drilling operations, including rigs and locations, in the pool proper, not counting the wildcats in the county. Output of the field held well above the 100,000 barrel daily mark the past week, as follows:

Date	Wells Producing	Production
May 3	50	127,006
May 4	46	113,699
May 5	50	159,017
May 6	45	104,216
May 7	45	110,305
May 8	47	119,834
May 9	39	76,353

On May 9 there were 222 wells completed, many of which are not legal producers because of the penalty imposed upon them because of former proration periods. A flat penalty of 76 days is put upon new wells between date of completion and date of allowed production.

Latest available figures at this time show the Prairie Pipe Line Co. is leading in runs from the field, with the Sinclair Pipe Line Co. second. For the week ended May 1 the total runs were as follows:

Empire P. L.	105,050
Indian Territory (tank cars)	72,420
Magnolia P. L.	89,668
Oklahoma P. L.	105,669
Prairie P. L.	166,284
Shell P. L.	15,214
Sinclair P. L.	120,683
Tidal	64,419

Of the foregoing companies, all except the Indian Territory and the Tidal have trunk lines from the field. The Tidal has a gathering system and turns the oil to the Magnolia Pipe Line as tender shipment south.

Of the several completions in the pool during the past week, all of them of the customary gusher type, none had the effect of extending territory. They merely added to the potential, rated at something more than one million barrels daily.

Kansas went through a quiet week. Chief completions were in the Voshell pool, which is producing, under proration, at an average rate of 16,000 barrels per day.

In the new Raymond pool, of southwestern Rice county, Allison & Fitzwilliams completed their No. 1 Mezger, SW SE NE of 21-20-10W, an extension to the pool. Pay was found at 3352-57⅛ feet and the well swabbed 140 barrels in two hours. This is a Siliceous lime pool. It is a quarter mile east of the group of four wells and is the fifth well of the pool.

Milam County Wildcat

HOUSTON, May 8.—A test being drilled six miles west of Rockdale in Milam county, central south Texas, by Paul Doran and Groneman & Kiser, on the Vongonten tract, is reported by Mr. Doran as picking up a gas show at 635-650 feet and a "rainbow" of oil at 900 feet. It is now drilling below 935 feet.

You can't know what SERVICE means *until you've used* "STAINLESS"

Tanks, Pipe, Casing, Tubing, Stills . . . Every metal item is made better when it's made of "Stainless".

STAINLESS Steel has established a new and higher standard of service for petroleum handling equipment. Progressive oil men no longer tolerate the constant and costly replacing of rusted, corroded and "worn out" metals. Today, it's "Stainless", from "crude to curb".

Stainless Steel can be made many times tougher than ordinary steel. It is available in *Brinell* 150 to 600 and *tensile strength* 60,000 to 250,000 pounds per square inch. It gives you Drums, Tank Wagon Cans and Tanks that retain forever a brilliant lustre and "stand up" under an extraordinary amount of rough usage. Demand "Stainless", it lowers upkeep costs and its reflecting surface decreases evaporation.

***Genuine* Stainless Steel is manufactured only under the *patents* of**

AMERICAN STAINLESS STEEL COMPANY

Commonwealth Bldg., Pittsburgh, Pa.

STAINLESS STEEL

TRULY the lines of an editor are cast in pleasant places. The old jokes about the country town publisher who took in pumpkins and turnips for subscriptions are no longer tinged with truth. In this day an editor needs but to announce that he yearns slightly for this or that and a host rushes forward to accommodate him.

Take, for instance, those Kansas editors. They organized themselves into a golf association several years ago and this year they picked Eldorado, Kans., as the scene of their topping and slicing. The affair comes off May 23 and 24. Are they playing for a silverized cup worth about one dollar thirty? They are not. One prize is a tank car—8000 gallons—of gasoline and another is the same quantity of crude oil. The publishing business is at a standstill this week. All the editors are practicing.

The Skelly Oil Co. offered the gasoline and the El Dorado Refining Co. the crude oil. The latter company said that if the winner preferred his winnings in the form of refined products it would process the tank car of crude for him.

We asked the self-styled Jim Nagle, of the Skelly, just what an editor would do with all that gasoline. He replied that he probably would start a filling station. The bureau of useless statistics of the company has figured it out that if the editor-winner drives a flivver the tank car of gasoline will propel him 160,000 miles, or will last him 13 years, assuming that he uses 100 gallons per month. This bureau says the average man uses that much, which we quite sincerely doubt. Or, if the editor drives a "big" car, which all editors do, he will have enough gasoline to keep him on the road and add further to the traffic problems, for around seven years or 80,000 miles.

Upon our own responsibility we offer further statistical meanderings. If the editor who wins the gasoline is of the type that has an old one-cylinder gasoline engine in the back of his shop, used to run the press on which he prints his newspaper, public sale bills, stud horse posters and other odds and ends that come his way, he will have enough fuel to keep his shop going unto the fourth or fifth generation. But that kind of an editor probably doesn't play golf.

These are said to be the most valuable prizes ever offered to an editorial golf meet and except for the big professional affairs, they exceed in worth any given in any tournament in the United States.

* * *

One more paragraph concerning newspaper people. A card has been received from F. S. Smithers & Co., New York brokers, announcing the admission of Peter J. Murphy to general partnership. For several years Mr. Murphy traveled a beat for the Wall Street Journal, specializing in oil news. He knows all the oil personages—is on familiar terms with most of them—and is quite an acquisition to anybody's firm.

* * *

Enid, Okla., inspired, no doubt, by the frequent assertions in this column that no town could be a good oil town unless it had a good hotel, has opened with appropriate ceremonies a 300-room tavern. When that long expected boom in western Oklahoma comes off, Enid will be the logical center. Its census figures have been announced as 26,331, a gain of 58.8 per cent in the last 10 years.

* * *

Ben Horton, scout for the Sinclair Crude Oil Purchasing Co., at Wichita, Kans., has been made assistant to S. L. Fuller, Jr., who has charge of the Sinclair Oil & Gas Co. land office in Wichita. W. S. Absher, west Kansas scout for Sinclair Crude, succeeds Horton.

W. Scott Heywood

* * *

W. R. Wellborn, formerly production foreman for the Louisiana Oil Refining Corp., now occupies a similar position with the company in the Smackover district.

* * *

J. N. Barrineau is purchasing agent for the Missouri Valley Gas Co. in Omaha. He formerly was with the Lucey Products Corp. at Houston.

* * *

Offices of the engineering department of Henry L. Doherty & Co. are being transferred from Chicago to Kansas City. This move is preparatory to the construction of a gas line from the Texas Panhandle to Chicago.

* * *

Independent refiners of Montana recently formed an association. James W. Johnson, of the Shelby Pipe Line & Refining Co., was elected president; A. W. Soderstrom, Big West Oil Co., vice-president and P. R. McHale, of the Shelby Pipe Line & Refining Co., secretary-treasurer. Other than these the directors are John Coons, Toole County Refining Co. and P. L. Withers, Conrad Refining Co. The organization will affiliate with the Independent Petroleum Association of America.

* * *

We are chided gently by W. Scott Heywood, of Jennings, La., for our account of the Fort Worth meeting of the Independent Petroleum Association of America. Mr. Heywood says:

"I note in your article of April 23 issue that you quote part of my talk at Forth Worth and state that my expressions and one other regarding Standard Oil, etc. was 'individual expressions and went into the record as such.' I do not know why you take that position, for if you do not know it, I want to state that as vice-president of the association of Louisiana (national) my remarks were made, and before they were uttered Mr. Tucker and Mr. Franklin approved them and urged them to make the talk. I am not complaining but want it made clear to you that Mr. Franklin shares the opinion that I hold as to the

manipulations carried on in the oil business by Standard and other large companies."

The injustice done Mr. Heywood was unwitting. No statement was made to the meeting that his address had the approval of the officers and no resolution was proposed to make his sentiments those of the association. We thus make public confession of our mistake but insist that it was not premeditated. We are not in the secret employ of the Standard, although we have heard tales concerning those who are on its regular payroll that make us a trifle wistful.

This man Heywood, by the way, has had quite an active life as an oil operator. He was one of the first to reach Spindletop after it was discovered and he drilled the first commercial oil well in Louisiana, we have heard him say. That was the opener of the Jennings pool. He was active in the Panhandle, Texas, development and in other areas since that time.

* * *

Seth Herndon, of the Bu-Vi-Bar Petroleum Co., returned last week from a European tour.

* * *

Alexander J. Duaei is the new Western territory sales manager for the W-K-M Co., Inc., of Houston. Mr. Duaei has offices in Chicago. He was for 11 years with the Johns-Manville Corp. in New York. The W-K-M company manufactures oil field and pipe line equipment.

* * *

That census is giving many of our Mid-Continent cities cold chills up and down the chamber of commerce spine. Tulsa newspapers did a little snooping and guessed that the official count would reveal less than 145,000. This is about 40,000 less than the secretaries of civic organizations had claimed. Oklahoma City is sitting tight, but worrying a little. Wichita Falls grew anxious and offered a bounty of 25 cents per name to anyone who would report on persons that had not been counted.

* * *

Of greater interest than the census figures was the supreme court decision to prohibit home-brewing. There are some expert brewmasters in Tulsa and they are reported to be laying in a large stock of the illegal corks, bottles and caps against the day when the decision will be enforced.

* * *

Deering J. Marshall has purchased an interest in the Ritchey-Moore Oil & Gas Co., of Wichita. He will have charge of the land and lease work. The name of the company probably will be changed to the Moore-Marshall Oil Co. W. R. Ritchey is no longer identified with the company.

* * *

Oil men who attain affluence use their money in various ways. Walter R. Ramsey, of Oklahoma City, uses part of his on his country estate just outside that city. He has two lakes where fishing may be practiced and another for the growing of several kinds of fish. He has a houseboat and a beach made of sand which was brought from Galveston. Then there are splendid gardens—more than 3000 rose bushes adorning them—small waterfalls, rustic bridges and various other ornamentations. Here in this paradise Mr. Ramsey is to be found when he is not busy getting up a big block of acreage to prove and sell to some major company that wants to strengthen its producing position.

First of Wichita Falls District's Deep Tests

(*Continued from Page* 45)

"Micro-paleontologists have confirmed the pre-Mississippian age of the productive limestone reservoir discovered in southern Young county by the Panhandle Refining Co., in its McClusky No. 7, at a depth of about 4200 feet. This 'pay' is now assigned to the Viola lime which, with the overlying Hunton lime, has yielded profitable wells in the Seminole district of Oklahoma.

"What is of probably more moment is that the Viola lime overlies the true sand deposits (the Seminole and Wilcox sands) and sandy, porous dolomites of the Simpson and Arbuckle formations which serve as the main pre-Mississippian reservoirs in Oklahoma and Kansas.

"There is every probability that members of these true sand deposits of the Simpson which extend from the Great Lakes area to the Arbuckle district in southern Oklahoma (showing unusual thickness in the latter locality) will be found in North Texas also. Many of the wells which have penetrated pre-Mississippian beds in north Central Texas report sands, but in the majority of cases these appear to be porous dolomites."

Mr. Cheney points to the best proof that north Central Texas has oil possibilities in pre-Carboniferous beds as the fact that oil has been and is now being produced therefrom in several localities. Relatively few wells have been carried below the Mississippian deposits in the region.

An increased interest in the older reservoir rocks has been evident in the last two years with the following results pointed out by Mr. Cheney:

(1)—Added evidence that sediments of Viola and Simpson age extend from Oklahoma into north central texas;

(2)—Additional wells scattered over north Central Texas recording the presence of oil in pre-Mississippian beds, and,

(3)—Apparently one more commercially productive pool discovered by Kewanee Oil & Gas Co., in its Hyman B-6 well, completed in July, 1929, in northwest Cooke county.

The Hyman B-6 well had initial daily yield of 4370 barrels and three nearby wells were completed for 1800, 1000 and 820 barrels, respectively.

"Drill cuttings and cores indicated," says Mr. Cheney, "that a porous weathered limestone of pre-Mississippian age, first penetrated at depth of about 1450 feet, served as the main source of these abnormally large yields. However, the wells were completed with perforated liners set on top of this limestone, hence some of the flow may have come from overlying sands of Canyon (upper Pennsylvania) age, which yielded up 200 barrels in nearby wells completed above this porous lime.

"These four (pre-Mississippian) wells are expected to show an ultimate total yield of about 500,000 barrels, according to production records to date. The pre-Mississippian limestone beds occur at much lower elevations in the area around these productive wells, its surface being 1000 feet lower in a well drilled one mile to the southeast.

"One is impressed by the very small size of the producing pools so far developed from these older beds in north central Texas. Discoveries to date resemble the small pools developed from the pre-Mississippian beds in northeast Oklahoma and southeast Kansas.

"There is, as yet, no proof that north Central Texas will furnish major pools from these older beds such as Seminole, Cushing and Oklahoma City, nor is there any conclusive evidence that this will not take place.

"In the meantime, the comparison of the stratigraphy and the structural history of Oklahoma and north central Texas reveals sufficient similarity of conditions to warrant continued search in the latter area for large accumulations of oil in these older reservoirs."

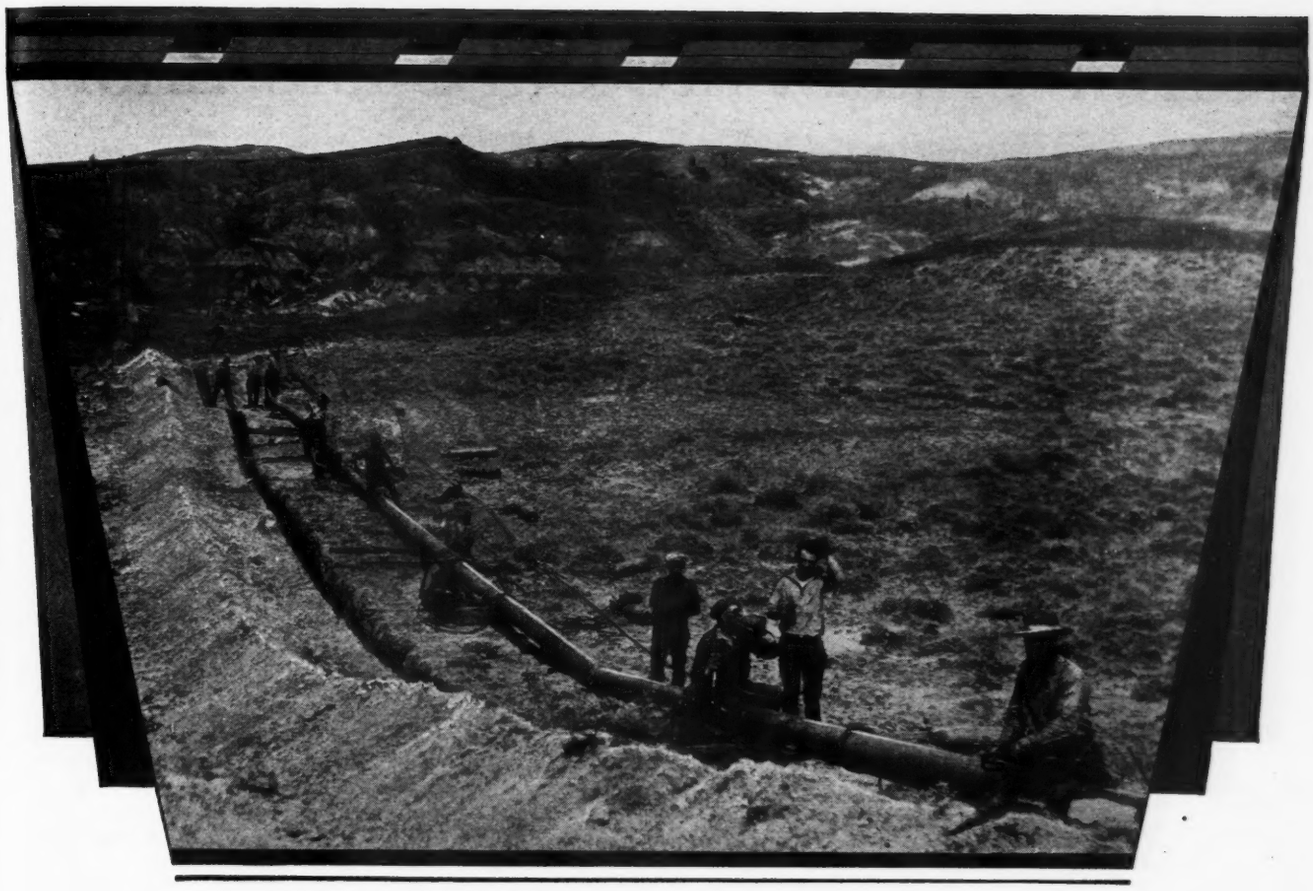
Alberta Production Doubles in 1929

TORONTO, May 9.—Five fields in Alberta, Canada, produced 999,152 barrels of crude the past year, of which 981,221 barrels came from Turner Valley.

The other four fields and amount of production were: Wainwright, 12,332 barrels; Ribstone, 2839 barrels; Skiff, 1432 barrels; and Red Coulee, 1328 barrels.

Crude in Turner Valley is mostly 60 degrees and over. That field produced 908,741 barrels of that grade the past year.

Alberta's output more than doubled in 1929 over 1928. Production in 1928 was 489,531 barrels; 1927, 332,133 barrels; 1926, 219,598 barrels; and 1925, 168,643 barrels.



. . . . . TO PRODUCE DEPENDABLE WELDS

IN welding gas and oil pipe lines selection of materials and instruction in correct welding technique are important factors of good welding practice . . . Under Linde Procedure Control careful and studied selection of materials and application of proven methods make oxwelded joints as strong as the pipe and permanently leakproof — 100 per cent efficient.

THE LINDE AIR PRODUCTS COMPANY . . . THE PREST-O-LITE COMPANY, INC. . . . OXWELD ACETYLENE COMPANY . . . UNION CARBIDE SALES COMPANY,

Units of UNION CARBIDE AND CARBON CORPORATION

General Offices . . . . . New York UCC **Sales Offices . . . In the Principal Cities**

65 Linde plants . . . 48 Prest-O-Lite plants . . . 174 Oxygen Warehouse stocks . . . 156 Acetylene Warehouse stocks
42 Apparatus Warehouse stocks . . . 245 Union Carbide Warehouse stocks

Fear of Crude Price Cut Spurs Efforts To Extend Proration to August 1

By Jack N. Westsmith
N. P. N. STAFF WRITER

LOS ANGELES, May 9

FOLLOWING the refusal of a number of comparatively large producers to sign up for continued proration during the period May 1 to August 1, a series of rally meetings are being held in the critical areas to persuade these operators into continuing the voluntary curtailment program.

The drive for better cooperation was influenced by recent predictions that crude prices will be cut unless the overproduction on the Pacific Coast is lessened.

At the meeting of Signal Hill operators, called for the purpose of appealing to 32 independent oil companies, who with a combined potential production of 31,149 barrels per day and an allowable production of 17,000 barrels, had not signed the new curtailment program, A. T. Jergins of Jergins Trust Syndicate, stated that his company would not continue its present policy of absorbing a part of the excess production produced by operators not in accord with voluntary curtailment.

While daily average production from "the Hill" has not exceeded, appreciably, the allowable figure during the past month, it is felt that unless all operators agree to reduce their daily output the effectiveness of the curtailment at this field and other California fields will be impaired. One large independent company, which had not signed-up, had increased its production approximately 1000 barrels per day during the first three days of May and it was feared other companies might do likewise.

Neil Anderson, umpire at Signal Hill, made the statement that there are now 128 wells drilling in the field that have more than a good chance of obtaining commercial production and that unless 100 per cent cooperation is obtained, production is bound to increase during the coming month. It was pointed out that when an operator gives a written agreement of his willingness to curtail his production, the umpire is endowed with the authority to regulate his pipe line runs to the prescribed amount.

This program is similar to the one in effect at Elwood but differs from that at Santa Fe Springs where operators merely give verbal approval of their desire to cooperate in curtailing production.

In discussing various aspects of the California curtailment situation, Hooper C. Dunbar, chairman of Santa Fe Springs Operators Committee indicated that additional proration of production was looked upon askance by some operators who felt curtailment had reduced the ultimate recovery from their wells by increasing edge water troubles and disturbing established channels of flow. Other producers have not been satisfied with potential production figures as fixed by the umpires.

Although operators at Santa Fe Springs went on record early in the past week as being opposed to continuing voluntary curtailment a determined effort will be made, at a meeting to be held May 12, to keep the existing proration machinery intact. If this effort proves fruitless it is expected the program will be thrown out, resulting in an unrestrained production with every operator striving to survive the predicted cut in crude oil.

Paul N. Boggs, vice president of the Union Oil Co. and chairman of the General Committee of Fifteen, appointed to direct state-wide conservation of oil, has called a meeting of the committee for May 14, to discuss advisability of setting a new and lower daily oil allowable for the state.

Although the present program calls for reduction of crude oil output to 610,000 barrels, actual daily production has been exceeding 630,000 barrels and it is anticipated the committee will act favorably on a suggestion by Mr. Boggs that state production be reduced to 575,000 barrels. Even the most optimistic leader in Pacific Coast conservation moves does not hope to actually achieve this figure but by settling a limit approximately 35,000 barrels per day below the present allowable and nearly 55,000 barrels below the actual daily output, it is expected the state's total yield will be brought down to at least 595,000 or 600,000 barrels.

The committee of fifteen will make a thorough study of a report prepared by the California Oil Research Committee on matters of petroleum needs and supplies on the Pacific Coast. Although it was indicated early in the week that the research committee was in partial accord on the question of a desirable allowable production from the state for at least three years, later reports were to the effect that the committee's findings would not carry much weight in the face of evident dissatisfaction among operators not in accord with curtailment of crude production.

In sharp contrast to the attitude of some operators at Santa Fe Springs and Signal Hill, producers in the El-

Majority Agree to Continue Proration

By Telegraph

LOS ANGELES, May 13.—Twenty-seven Santa Fe Springs operators at a meeting today, representing a combined allotted production of 94,824 barrels per day, passed a resolution agreeing to reduce their output immediately to 57 per cent of the potential production fixed by the umpire to avert a crude price cut. Nineteen operators with a combined allotted production of 19,000 barrels per day were not present.

The resolution excepted the Wilshire group and George F. Getty, two large independents who with an allotted production of 16,000 barrels and an actual output of 25,000 barrels per day have consistently refused to join the curtailment movement. Other independents are to reduce their output to the desired amount while seeking a way to bring these two into line.

It was reported at the meeting that Getty is not satisfied with the potential production allotted his leases by the umpire. Prior to curtailing production to the amount allotted he sought 30 days to condition his wells, install compressor equipment and to make open flow tests with other wells in the field closed down. The committee considered the demand unreasonable and prepared to control the situation without the aid of Getty and Wilshire.

Inability to obtain full cooperation may impair the curtailment program and result in a crude cut even though a majority of operators stay in line some operators believe. A meeting of the general committee is to be held Wednesday to decide the future course of the California program.

wood field passed a resolution May 9 expressing their willingness to further stabilize the California oil industry by holding production in this field to any amount determined by the General Committee provided such figure would in turn conform as to percentage of curtailment in all other flush fields. They further agreed that all excesses now existing against operators at Elwood and any excesses in the future shall be absorbed within 30 days of their occurrence.

This action by the group of independent operators in the coastal field, with no major interests to lead the way, sets an example in cooperative conservation. With its present potential of approximately 83,846 barrels the field has kept within the allowable of 47,790 barrels per day except in a few instances where large gushers have chalked up considerable excess production during the five-day open flow tests. At the meeting it was decided that in the future new completions would not be allowed to flow wide open during these flow tests so as to eliminate over production during the period.

Ohio Oil Completes Second Well In Playa del Rey Field

LOS ANGELES, May 9

A NEW completion in California's baby field of Playa del Rey, an unsatisfactory production test of a deep test of the Huntington Beach field and several completions, extending the present productive limits of other Los Angeles and Coastal fields, constituted the only interesting happenings on the Pacific Coast during the past week.

Ohio Oil Co. drilled in its Recreation Gun Club No. 2 for an initial production of 1575 barrels of 25 gravity oil from a depth of 6150 feet in the del Rey field southeast of Venice. It is reported Ohio's new well took in less shale than the discovery well and as a result had a smaller sulfur content, one of the unsatisfactory characteristics of oil produced from the discovery well.

Ohio's Howland No. 2 is drilling below 6775 feet and as yet has failed to penetrate the pay sand. As the well is approximately 3000 feet southeast of the discovery it is thought to lie beyond the predicted narrow limits of the field.

At Signal Hill, Tom Cannon, completed his Hall and Weber No. 1 on the southeast flank of the field for an initial production of approximately 2300 barrels of 30 gravity oil from a depth of 7350 feet. With over 700 feet of productive oil sand formation the well came in with very little swabbing, giving a good gas pressure of approximately 1000 pounds on the casing.

Other companies holding property offsetting the Hall and Weber lease are preparing to drill new wells or deepen existing wells in order to tap the pay. Production segregated by companies and the status of drilling wells in this field is given in the following table:

Company	Wells	Prod. B/D	Aver. Per Well	Drilling Wells	Rigs Loc. etc.	Idle	Shut-in Abandoned
Shell Oil Co.	72	10,985	151	3	0	4	20
Richfield Oil Co.	34	6,722	203	4	0	6	14
Dabney-Johnson	35	5,124	146	14	3	5	2
The Texas Co.	21	2,956	141	2	1	1	6
Union Oil Co.	4	1,419	355	0	0	2	4
General Pet. Corp.	11	1,198	109	1	0	1	1
Miscellaneous	230	41,002	178	86	41	57	14

Taylor and Murphy, two independent operators in the Potrero field, southeast of Inglewood, located in the center of activity at this field completed their Seeberg No. 1 for an initial output of 1400 barrels of 40 gravity oil per day from a depth of 5336 feet. According to field reports the oil was clean and checked with results that obtained in Sunset Pacific Oil Co.'s Inglewood Community No. 2 and No. 3, the first wells to obtain large commercial production in the Potrero field.

The Seeberg project like others drilled in the area was originally intended as a shallow producer but because of inability to secure a water shut-off in the loose shale overlying the upper pay it was deepened to test the sand found by Sunset Pacific. At latest reports the well had increased its flow to approximately 1700 barrels per day.

George F. Getty Inc., is redeepening his Parker 1 to the lower sands. This well was completed in the shallow zones several months ago for about 400 barrels of oil and water, but was later killed on account of loose sand present at the well bottom.

Development of the deep sand at Huntington Beach has been held up by the presence of water in Barnsdall Oil Co.'s Syndicate No. 1, standing cemented at 5596 feet. Engineers, who think the water is leaking in around the shoe, will make a test during the week and recement if necessary. Leaders in the California industry are attempting to delay development of the deep sand at Huntington Beach until the present overproduction crisis has been passed.

Two interesting production tests are to be made within the coming week in the coastal fields of Santa Barbara county. Pacific Western Oil Co. is drilling below 3830 feet in its Blue Goose No. 3 at Elwood after having picked up the oil sand at 3650 feet. This is over 100 feet below the depth at which its Blue Goose No. 2 was completed and is comparatively deep for completions in the Elwood field.

Additional development work is under way on tideland permits at Elwood with Signal Oil and Gas Co. spudded in on its Permit No. 98, the most northwesterly test of the tideland area. The well is on property adjoining the C. C. Spaulding permit successfully exploited by Pacific Western Oil Co. Signal Oil Co.'s well is located at the outer end of a recently constructed 1400 foot pier and will be drilled in search of the main Elwood structure thought to extend northeast into the ocean from the mainland field developed by the Barnsdall-Rio Grande combination.

Standard Oil Co. is reported to be reaming out its wildcat well, Gerber No. 1, drilled to 4600 feet at Point Conception, Santa Barbara county, preparatory to making a production test of some very favorable showings reported found at between 4550 and the hole bottom.

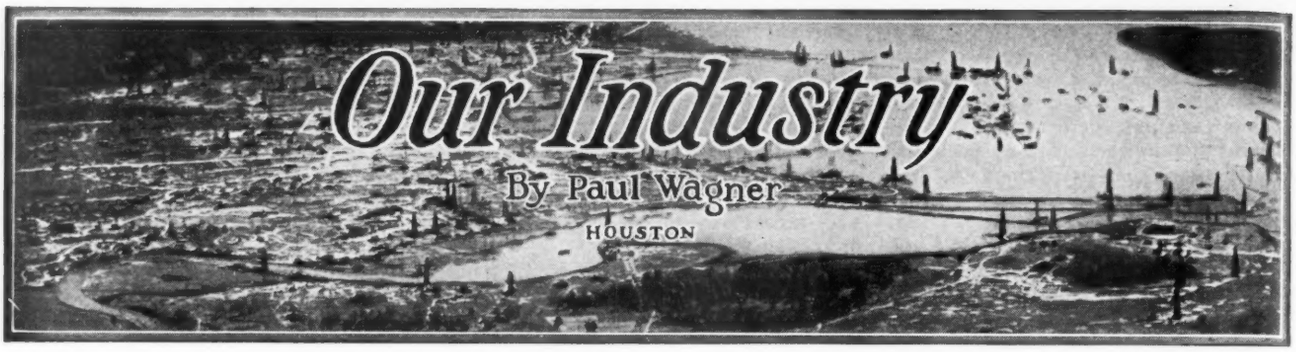
Another test of wildcat area is scheduled for the coming week in Chanslor-Canfield Midway Oil Co.'s Hobson 2 A, drilled to 6934 feet between the proven fields of Ventura Avenue and Rincon. If commercial production is obtained in this project a very large area will be proven as a fairly well defined structure extends between the above mentioned fields and Hobson 2-A is located on the axis of this structure approximately three miles southeast from the Rincon field and approximately 12 miles from the most northwesterly producer in the Ventura Avenue field.

Tells How Oil Industry Grew

NEW YORK, April 28.—The early existence of petroleum and the first drilled oil well are briefly described in "Petroleum in Legend, In History, and Today," the second of the oil industry series of 12 booklets which the American Petroleum Institute is publishing.

This booklet tells of the first oil boom town, Pithole City near Titusville, Pa., of the first tank car and first pipe line, and in few words describes the magnitude of the industry today.

A third booklet "Petroleum, A World Industry" is also out, telling how many countries are producing oil today, and of those countries where structures would indicate that no oil may be produced in commercial quantities.



MARVIN LEE, elected a vice president of the American Association of Petroleum Geologists in charge of finances, at the recent New Orleans meeting, maintains consulting offices at Wichita. His work has been limited to consultations since engaging in private practice in 1923. Before that he was from 1920-1923 a member of the firm of Allen & Lee. Previously, he was consecutively with

Marvin Lee

the United States Geological Survey in 1911-1914; Norfolk & Western Railway, 1915; associated with F. Julius Fohs, 1916-1917 and part of 1918; with the East Butte Copper Mining Co., 1918-1919 and part of 1920.

Mr. Lee was co-inventor of the Roto-Rey and Rhotostat automatic oil burners for residence and apartment heating in addition to small industrial installations. He holds the position of vice president in the Rhotostat Oil Burner Co.

Besides the A.A.P.G., Mr. Lee is active in the affairs of the Kansas Geological Society of which he is a past president and former secretary-treasurer. He also belongs to the American Institute of Mining & Metallurgical Engineers. His recreation is limited, Mr. Lee says, to geology, work and travel. Commenting on this, he adds: "I seem to automatically acquire more age and more friends; the latter offset the evils of the former."

* * *

W. van Holst Pellekaan, vice president of the Shell Petroleum Corp., at St. Louis, and directing head of the Royal Dutch-Shell geological work in America, spent the month of March and part of April on a business trip to The Hague, Holland.

* * *

A. J. Freie is now on the geological staff of the Trinidad Oil Fields Operating Co., Ltd., controlled by Standard Oil Co. of New Jersey, at San Fernando, Trinidad, British West Indies. He was formerly with the Indian Territory Illuminating Oil Co., in Mid-Continent territory.

* * *

Acquisition of controlling stock in the Freeport Sulphur Co., by the Moody-Seagraves interests of Houston, has been followed by election of Odie R. Seagraves as chairman of the Freeport's board of directors. Mr. Seagraves is also president of the United Gas Co., holding corporation for the various Moody-Seagraves interests.

* * *

B. E. Compton is now identified with The Texas Co.'s Cisco district engineering staff in the general Ranger territory. He was formerly with the state highway department at Austin.

* * *

Tom F. O'Brien of The Texas Co's. Cisco district has an idea for builders of golf courses. After a recent visit to the company's properties in southeastern New Mexico he announced the belief that a passable road could be built to the Shepherd and Cagle permit lands if every town of 2000 population or more in the United States would establish golf courses, and get their sand supply from the region he traversed.

* * *

Paul Stone, chemist, and R. C. Schorlemmer, assistant power engineer, have been transferred from the Port Arthur Works of The Texas Co., to the Amarillo refinery.

* * *

C. C. Kifer, formerly Ventura district field superintendent of the Shell Oil Co. (California), has been transferred to Long Beach. He was succeeded at Ventura by C. V. White.

* * *

An accompanying picture of W. M. Harrison and E. N. Koonsman, of Fort Worth and Dallas, respectively, shows two widely known personalities in the petroleum industry. Mr. Harrison heads the Star Refining & Producing Co., which operates a plant and a string of service stations in Fort Worth. Mr. Koonsman is identified

W. M. Harrison and E. N. Koonsman

with the sales department of the Pittsburgh-Des Moines Steel Co.

* * *

John Henz of the Gulf Production Co's. research department at Houston has been making an extended survey of drilling conditions and development problems in Pacific Coast fields.

* * *

M. T. Green has taken up his new duties as assistant power engineer at the Casper works of The Texas Co. He was recently transferred to Wyoming from Port Arthur, Texas.

* * *

Francis X. Bostick, geologist of the Southern Crude Oil Purchasing Co., operating arm of the Pan American Petroleum & Transport Co. in the southwest, has moved his headquarters to Tyler, in the East Texas district.

* * *

M. W. Lake is now field superintendent of the Richfield Oil Co. of California in the Midway-Sunset and Lost Hills district of the San Joaquin Valley region. He was formerly the Richfield's resident geologist at Taft.

* * *

J. N. Barrineau, formerly of the Lucey Corp., at Houston, is now purchasing agent of the Missouri Valley Gas Co., with Omaha headquarters. O. P. Williams, also now with the Missouri Valley company, was with the Magnolia Gas Co., at Bethany, Louisiana, until the recent consolidation of that concern with the Moody-Seagraves interests and the Electric Bond & Share Corp.

* * *

W. F. Bowser is now geological scout for the Arkansas Fuel Oil Co., with headquarters at San Angelo, Texas. He formerly scouted West Texas territory out of Midland for the Tidal Oil Co.

* * *

Robert Moran of Los Angeles and William E. Wrather of Dallas are two outstanding figures in American geology who have recently spent a part of their time in globe-trotting. Mr. Moran recently returned to his California home after a business trip to Peru, on which he was accompanied by his young son. Mr. Wrather spent several months of last year in South Africa, where he attended the International Geological Congress. Few geologists are better known than Mr. Moran on the Pacific Coast and Mr. Wrather in the Mid-Continent.

* * *

Charles W. White, formerly of Midland but more recently of Fort Stockton, is now scouting West Texas territory for the Vacuum Oil Co., out of San Angelo.

* * *

M. H. Goode, formerly a vice president of the Marland Oil Co. of Texas, before merger of the parent Marland Oil Co. of Delaware with the Continental Oil Co. of Denver, now operates individually with offices in the W. T. Waggoner building at Fort Worth.

M. H. Goode

Robert Moran and William E. Wrather

H. B. Hurley

Before moving to Texas several years ago, Mr. Goode was identified with Marland operations on the Pacific Coast. Previously, he was in the headquarters organization of the Marland Companies at Ponca City.

* * *

Fred Prince, Corsicana oil operator, is making headquarters at Tyler while watching a wildcat play for oil in Henderson county, East Texas.

* * *

H. B. Hurley, district superintendent of the Continental Oil Co. of Delaware in the Permian salt basin region of West Texas and southeastern New Mexico, makes his headquarters at Big Spring, Texas, where he is centrally located with reference to his company's development. The Continental is one of the most extensive operators in the Roberts-Settles division of the Howard-Glasscock area of West Texas and through its stock control of the Texon—Group One Companies is one of the two interests owning the Big Lake field of Reagan county. In southeastern New Mexico, the Continental's properties are owned jointly with the California Co., subsidiary of Standard Oil Co. of California, for the most part.

* * *

Phillips Petroleum Co., of Bartlesville, is maintaining two scouts in East Texas territory with headquarters at Tyler. E. M. King was recently transferred from Midland, West Texas, to Carlsbad, New Mexico, and thence to Tyler. Now Dave Hemsal is in the East Texas territory from Sweetwater.

* * *

T. O. Matkins, East Texas scout of the Empire Gas & Fuel Co., makes headquarters at Tyler. He was recently transferred from Carlsbad, New Mexico. His bride, formerly Miss Ruth Brown of Fort Stockton, Texas, accompanied him.

Central Power Pumps Eight Wells With Oil at 4000 Feet

By L. E. Smith
N. P. N. STAFF WRITER

TULSA, May 8

REPLACEMENT of individual swabbing and pumping equipment on eight wells in the Maud pool, Pottawatomie county, Okla., with a central band wheel power and pumping jacks meant recovery in salvaged equipment almost double in value to the cost of the power and installation.

The Pure Oil Co. recently put this power into operation. It is pumping deeper wells than any others in the country similarly operated. Production, from the Misener sand, is found at 4000-4100 feet depth. Other power-pumped leases noted for depth fall short from 100 to 200 feet of this one in the Maud pool.

The wells, which are on the Lindley lease in 18-8-5E were drilled with 122-foot steel rotary rigs. Nearly all were all steel equipped. For pumping or swabbing, 24-inch face band wheels were installed, 40 horsepower gas engines, 22-inch belts. These were salvaged and moved to other properties where they were needed, as well as the bull wheels, steel A-frames, walking beams, jack posts, engine and belt houses, water tanks.

The derricks were replaced with 20-foot base steel rigs 72 feet high. They were brought from other properties in Oklahoma and Kansas where they had been taken from wells that had ceased to produce. As the pumping derricks are of smaller base than the rotary derricks that were removed not all the original concrete corners would fit when the pumping derricks were lined up with the jacks. The orginal corners are still in place and will be left against the remote possibility that deeper drilling may some time be done. They have no salvage value and there is no object in removing them at this time.

Time was when production men set an arbitrary limit of depth at which wells could be operated by central power. Not many years ago it was commonly believed that 2500 feet was about the limit. The trick lies in the use of equipment sufficiently heavy to handle the loads imposed by the long strings of sucker rods and this material is available today.

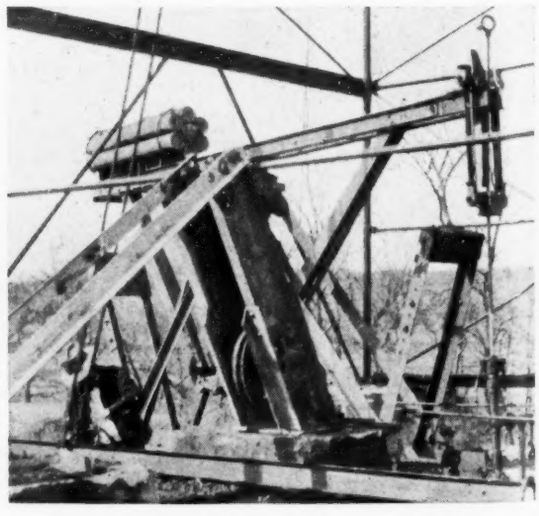
Within the steel building that houses the central power, the Pure Oil Co. has in operation a 30-foot National band wheel. It has 24-inch face and the eccentrics are 24 and 30-inch. It is powered by an 80 horsepower Bessemer single cylinder, two-cycle gas engine with Bessemer cut-off coupling clutch. A 22-inch, six-ply interstitched endless belt made by the Happy Belting Co. is used and a Happy automatic idler or tightener. This latter device which has been described* in NATIONAL PETROLEUM NEWS, earlier, is shown in an accompanying photograph. It is held in place against the belt by a counterweight outside the building. The automatic idler is being installed on many of the new powers in the Mid-Continent fields.

Rod lines are one-inch upset and the longest is 1135 feet. One well is reached by 1150 feet of rods, but the one swing

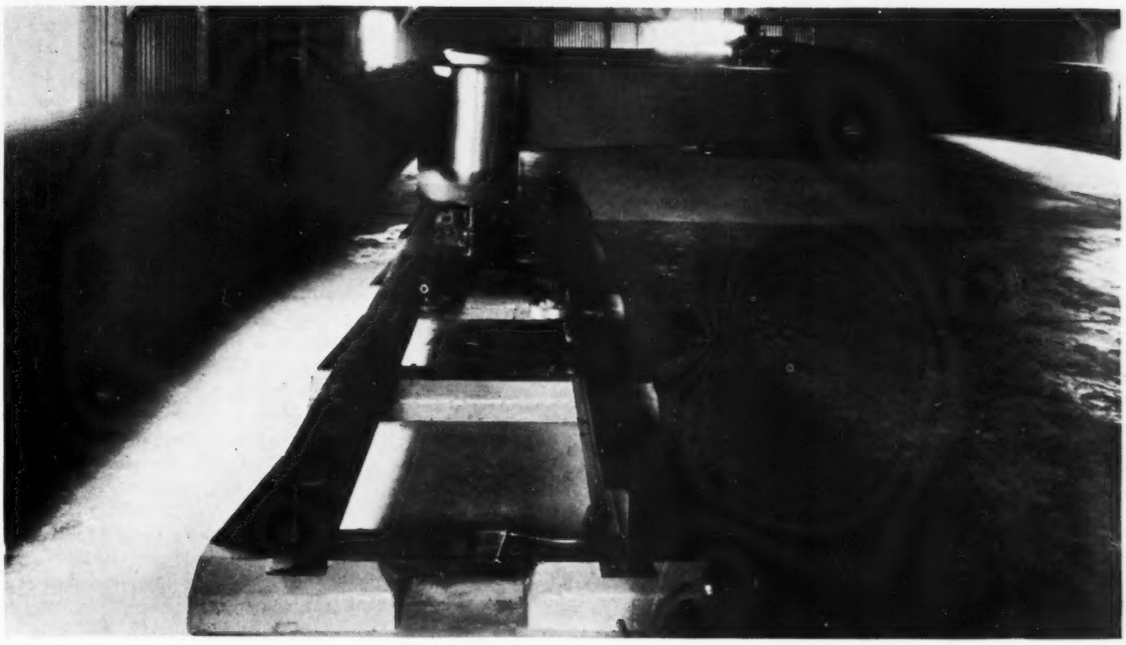
At the power. Note single-row of posts

*See issue of August 28, 1929, page 37

Swing and stroke multiplier. The only one on the property



A Goble jack. Note framework and sheave for pulling wells



Interior of power showing automatic belt tightener and band wheel

that is in use on the lease divides the rods to this one into lengths of 670 and 480 feet. The lease is an 80-acre tract and the eight wells are equally spaced in two rows. It has been possible to set the power in about the center so the wells are nearly evenly balanced.

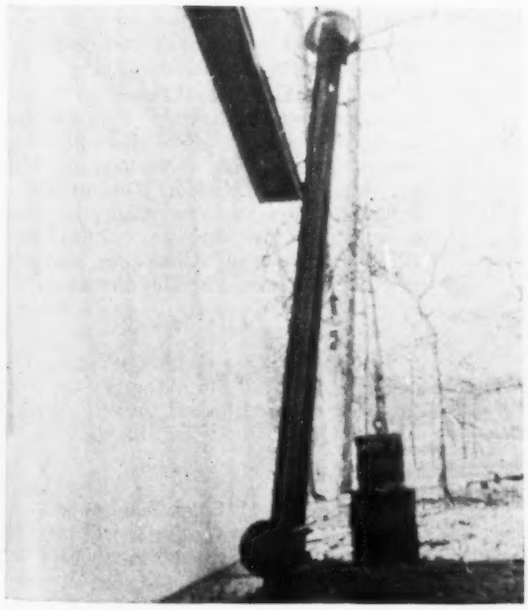
Some rather nice work had to be done in getting the lines across gullies and over the small hills on the lease. Different sized pull rod posts were brought into service—some as high as 12 and 15 feet—to maintain a level condition. The posts vary in diameter, some of them being four-inch. The longer ones are set in concrete.

Because of the heavier and hence stiffer rods used, it was possible to avoid the use of the familiar double bull-pen of posts at the power. A short rest is provided for the short rod out of the power when it is unhooked from the longer rod to the well and only the one post is set for the throw-off block. All-steel throw-off hooks are used to guard against breakage due to the great load. A feature of the throw-off arrangement is that the single posts are set in concrete, filled with concrete and tied back to the main concrete block on which the power rests by three-quarter inch rods. It is an added precaution against a post pulling loose.

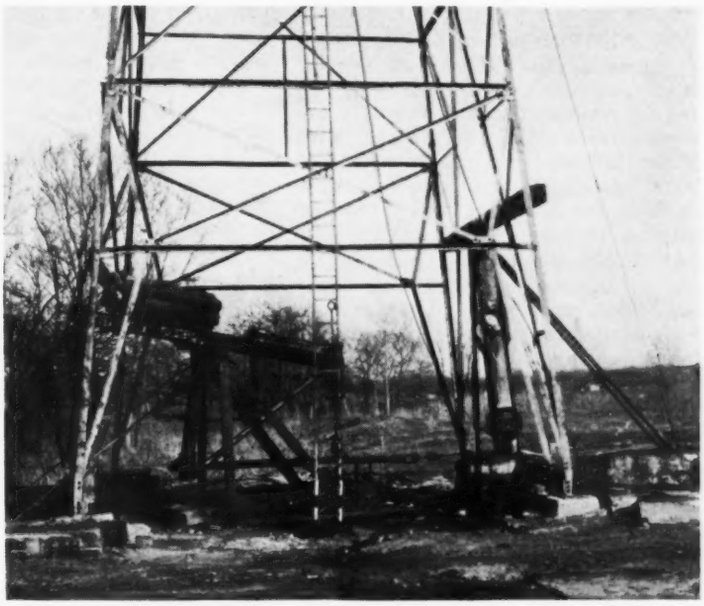
*See issue of August 28, 1929, page 37.

Only one swing is used in this installation. It is the Goble make and acts also as a stroke multiplier. This type is in common use but has been greatly improved in recent years. Its bearings run in oil and are so enclosed as to be dust proof. Several hold-ups and hold-downs are used here and there, as by these means and by some grading it was possible to keep away from a greater use of swings.

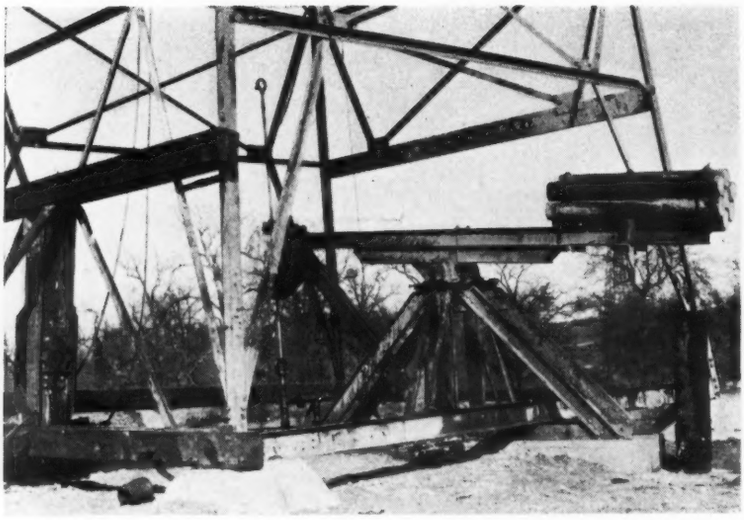
At the wells three makes of jacks are used, National, Jensen and Goble. Three-quarter and five-eights-inch sucker rods and two-inch tubing with two-inch cup type working barrels



Counterweight outside power. It controls automatic idler inside



A Jensen jack. Well pulling members are tied to old concrete block left when engine was moved away



A National jack and another type of sheave support

make up the underground equipment. Two of the wells are tubed with 2½-inch but the two-inch barrels are used on these also.

Varying lengths and frequencies of strokes are used in the plan of having all wells pump off at the same time. From 11 to 15 strokes per minute and length of stroke ranging from 30 to 48 inches accomplish this purpose satisfactorily. The wells are operated four to five hours at a time, twice daily. There is no water in the sand, hence it is not necessary to pump continuously. Thus one pumper does the work where two or three would be required if the wells were still individually operated.

New Equipment

Oil Well Improvements Co., Tulsa, Okla., is manufacturing what it terms an "All Purpose" control head embodying the features and advantages of all previous types of control heads for high pressure oil and gas volume. Its interchangeable features insure economy, safety and performance, the company says.

The "All Purpose" control head can be converted to either "set screw," "latch assembly" or "lubricating in" head by means of interchangeable top flanges. While the head is sold with bottom threaded to casing size and thread desired, bottom flanges are available for changing the thread or reducing to any smaller casing size.

All heads up to and including 9 inch O. D. have same size oil saver seat, take same size oil saver and lubricating flange to accommodate 10-inch casing for lubricating tools under heavy gas pressure or oil flow.

With only one control head body and oil saver, the operator can have any type, size or thread in control head construction from 9 inch O. D. down to merely having the necessary top and bottom flanges for changing the head.

All heads up to and including 9-inch O. D., are oil-tested to 3000 pounds pressure. Double by-pass outlets give the head greater flow line capacity and provide anchor lugs for securing the head.

The "All Purpose" oil saver is especially made for use in the control head. It is of extra heavy construction with two sets of rubbers crosspacked on the drilling line and with swivel roller top to accommodate the pull of the drilling line regardless of position of oil saver when secured in top of control head. The oil saver body, followers, and other parts, are oversize to insure against high pressures.

"All Purpose" stuffing box for closing top of lubricating chamber is similar to the type X used with the type X lubricating head.

* * *

American Steel Export Co., 295 Madison Ave., New York, has placed R. J. Eiche, formerly an executive with the Specialty Oil Tool Co., Los Angeles, into its oil well division. Mr. Eiche is sailing for South America where he will make an extensive survey of oil producing countries, after which he will open a European office for the company in London, according to L. C. Klein, vice president.

* * *

Walworth Co., New York, manufacturer of pipe for oil producers, refiners and pipe line companies, has established a new sales office at Houston, under the management of W. C. Goza, formerly manager of the company's western division sales at Kewanee, Ill.

Charles W. Watson has succeeded Mr. Goza as sales manager of the western division and will handle sales in that territory outside of Texas and Oklahoma oil fields. Mr. Watson will be at 231 S. LaSalle St., Chicago.

* * *

Haynes Stellite Co., Kokomo, Ind., has published a 31-page booklet on the use of its cutting tool products in the oil fields. A chapter is devoted to the ideal bit which must have a cutting edge composed of a material having a high degree of ability to resist abrasive wear. Other chapters tell of advantages of tools hard set and hard faced with Haynes Stellite products, tells how it is done, and of the general properties and various grades of Haynes Stellite. Many illustrations of these oil well drilling tools are included.

* * *

The Youngstown Sheet & Tube Co., Youngstown, O., has off the press book No. 190, bound in leather, containing 95 pages of information on tubular goods compiled exculsively for the oil industry.

It contains illustrations of various kinds of oil country pipe and has comprehensive tables on pipe measurement. A feature is the table giving A. P. I. standard specifications for line pipe to which specifications the Youngstown material has been manufactured.

* * *

The Republic Iron and Steel Co., Youngstown, Ohio, has just issued a new booklet featuring the advantages of Toncan Iron Pipe in the oil and allied industries where high tensile strength, resistance to corrosion, and general adaptability to a variety of purposes and conditions are points of paramount importance.

The booklet is illustrated with numerous cuts showing comparative corrosion-resisting qualities of this material, and tables of various physical properties are included. Toncan Molybdenum Copper Iron pipe is recommended for purposes where ductility and ease of threading, cutting and bending are desirable features.

* * *

Chicago Bridges & Iron Works, Chicago, has moved its Atlanta, Ga. offices to the Rhodes-Haverty Bldg. R. M. Campbell is in charge.

* * *

Republic Steel Corp. has appointed Harry Rhodehouse as general traffic manager. Mr. Rhodehouse held a similar position with the old Republic Iron & Steel Co. W. H. Ohl has been made comptroller of the new corporation.

Globe Flow Head Resists Sand Blast Of Big Oklahoma City Well

By William F. Lowe
N. P. N. STAFF WRITER

TULSA, May 8

FITTINGS to resist the sand cutting propensities of fluid in the big wells at Oklahoma City, are one of the major problems in that area. Materials of various kinds and of different degrees of hardness have been tried but none is entirely immune from the high pressure sand blast. In order to reduce the hazard thus created, the Skelly Oil Co., has installed a new flow head of unique and original design.

The idea for the globe shaped head belongs to V. L. Reed, division superintendent of the Skelly, and first tests of the device indicate that it merits the consideration of other operators. Mr. Reed had been experimenting with several different types of fittings for some time but without the desired result. Heavy, forged, heat treated steel blocks with extra heavy hydraulic nipples failed to meet the stringent requirements and more efficient fittings became an absolute necessity.

The well on which the experiments have been conducted is the Skelly Oil Co., No. 3 Hoopes, NE NW NE, 31-11-2W, in the prolific producing area at the south end of the field. The horizon from which the oil is obtained is either the Burgen or St. Peter sandstone of lower Simpson and is composed of fairly coarse, sub-angular grains. Though it is, for the most part, a hard and well consolidated sand body it has some soft streaks and it is mostly from these that the cutting grains are thought to come. That they come out in quantity is evidenced by the fact that a deposition of from six inches to a foot in traps and stock tanks is not at all unusual. The time required to do this is not long either.

The well is 6400 feet deep and is cased to the top of the sand. Its initial production was at the rate of 550 barrels an hour and it made approximately 15,000 barrels a day on test, with a gas volume of 75,000,000 cubic feet at 1200 pounds rock pressure. Before bailing in, two 7-inch master gates were installed below the floor to insure control when the expected large flow began. Both of these gates were of 3000 pounds test pressure and were rigged with remote control by the use of 3-inch pipe and universal joints.

Above the rig floor, the cross T and L's of the flow connections were forged steel blocks and the nipples were extra heavy and especially made of high grade steel. Though the initial flow of the well carried much of the rotary mud with it, there is reason to believe that sand from the

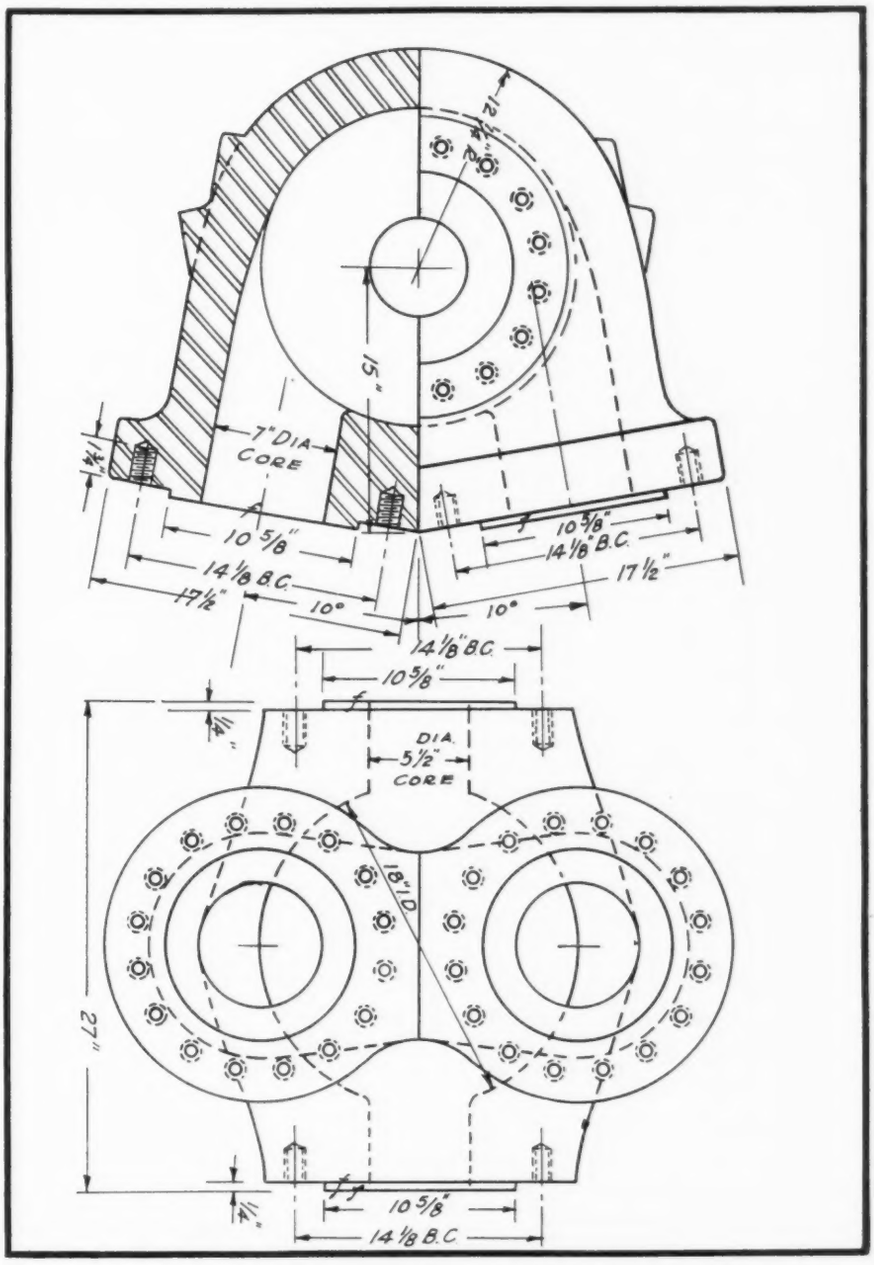


Fig. 1—Cross section drawings of globe flow head showing spherical interior. Note angular shoulders at lower end of opening at the top. These shoulders were rounded off by sand action in a 36 hour flowing period

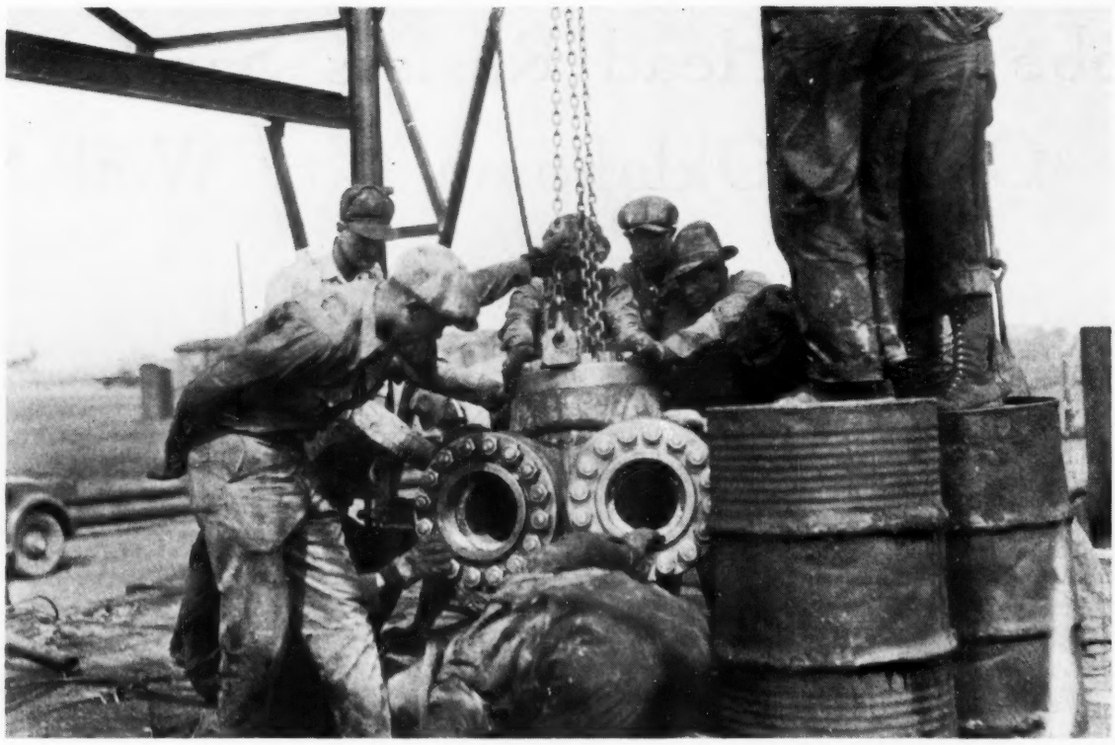


Fig. 2—Stabbing one ton flow head on the Skelly Oil Co., No. 1 Hoopes, at Oklahoma City. Note studded flanges around openings in casting

producing horizon was primarily responsible for the quick cutting of the special fittings. The blocks held in good shape but the swirl of the fluid in the cross nipples caused one of them to cut out in one hour and 25 minutes. The well was then shut in and plans drawn for the globe flow head, the original drawing for which is shown herewith in Fig. 1.

The Skelly Oil Co., was not alone in its troubles in this area, for the north offset to the No. 3 Hoopes, the Amerada-Sinclair No. 4 Kinter, SE SW SE, 30-11-2W, was having similar difficulties. This well had cut out of the conventional Christmas tree connections on two occasions, once in 11 minutes and a second time in 26 minutes. So destructive and so rapid has been the sand cutting on this well that the owners have not yet been able to really produce it, and they are watching with interest the experiment on the well to the south.

The globe flow head is a single alloy iron casting with four openings, the latter having heat treated steel flanges bolted around them, and the whole weighing slightly over 2000 pounds. A glance at Fig. 2 will give an idea of the difficulty of handling this heavy device when stabbing it on the top of the casing above the control gates. It is a little awkward, as it is not a balanced fitting, the center of gravity being on the side of the flow openings. However, the gang, under the direction of H. H. Happer, superintendent of the Oklahoma City district, made surprisingly easy work of the job.

In wall thickness, the head probably exceeds any other that has ever been used for the same purpose. At its thinnest point it is over four inches through, while above and below the globular space in the center, it is more than 6 inches thick. Because the tensile strength of alloy cast iron is considerably less than that of steel, it is necessary that the walls be heavy. Half the thickness would have answered the purpose had steel been used, but steel is more susceptible to sand cutting than is cast iron and for this reason the latter is preferable.

The spherical core is 18 inches in diameter, its end openings 5½ inches and the two side openings 7¼ inches I. D. Outside of each of these openings, set 1¾ inches deep in the tooled edges of the head, sixteen 1¼ by 6-inch studs are set. Around the side openings these studs are set in shoulders that are a part of the whole casting. Flanges of heat treated steel are attached to the head at all openings by means of these studs.

The side openings, as shown in picture No. 1, are set at a 20 degree angle with each other which permits almost a straight connection to the separators. This angle is to be reduced slightly in future models, however, in order to further eliminate bends in the lead lines. As it now stands, a cut and weld were necessary to make a good job of the small curve in the lines on either side of the traps.

An arrangement of this kind, where two flow lines may be hooked up direct from the head without the use of swings, is a decided advantage over the usual type even with slight bends in the pipe. The fluid flow may be checked and cushioned in the head itself rather than in the extra bull headed swings, thus reducing the number of places that are liable to be cut out and raising the safety factor.

The above has already proven true on the Skelly well for there is plenty of evidence of sand cutting on the upper inside surface of the new head. It will be noted in the drawing of the vertical section that there is an angular shoulder at the bottom end of the opening which leads to the bull plug on the top. After 36 hours of continuous flow, during which time the remaining rotary mud was blown from the hole, this shoulder was rounded off by sand action, though none of the other fittings showed serious cutting. The thickness of the outer walls at this point are sufficient to allow considerable rounding without causing a break. Mr. Reed indicates however, that in the next design these angles may be entirely eliminated and that a larger opening may be made at the top. It is suggested that the upper end of the head may be enlarged and extended in addition, thus giving the fluid a greater opportunity to cushion against itself. The result should be a considerable reduction in the cutting.

Because of the comparatively large

size of the head, it was first thought that ordinary nipples of line pipe thickness would be satisfactory, but it was later decided to use large hardened nipples direct from the head. This move was based on the experience had with the block swings on the previous connections. Though the nipples of the latter were forged integral with the block L's and cross T, they were quickly cut out. The fluid swirl set up inside the thick walled turns had its greatest action just outside in the lighter fittings down the flow stream. The forged blocks were also cut but did not give way.

There was a similar action inside the globe flow head which resulted, not only in the rounding of the upper shoulders, but also in ripple marking the sides. The latter however, were not deep enough to cause serious damage though a longer test might have made them stand out a little more noticeably. Most of the force of the sand cutting action was very evidently taken up by the head, for the nipples showed very little wear.

There is no question about the globe flow head being a move in the right direction for the production of the large wells at Oklahoma City. So heavy is the fluid with sand that replacement of fittings has been rather expensive on a number of wells to say nothing about the trouble and labor involved. In almost every case the greatest difficulty has been encountered in the flow connections at the casing head. Swings at the separators show little evidence of sand cutting, the force of the blast having been spent on the first turns at the well. By the elimination of these turns and forcing the oil to work against itself the new flow head suggests a solution to the problem.

Fig. 3—View of globe flow head in place with bullhead plug in top. The open end of line to separator may be seen to the right of the head. Note heavy flanges on both top and bottom

Potentials of West Texas Fields Are Revised

HOUSTON, May 8.—Under a revision of the prorating yardstick applying to the Winkler field of West Texas the allowable production hereafter will be 80,000 barrels daily instead of 150,000 barrels. Actually, however, the situation there will be little changed because the field has been producing less than 90,000 barrels daily for nearly a year and last week the daily average was 79,112 barrels daily.

In the prorating yardstick the field's potential is recognized as 152,027 barrels from 557 present producing wells. In the Winkler area there are now 34 wells producing pipe line oil, 148 are flowing under choke, 269 are pumping, 113 have 100 pounds or more back pressure, 117 have less than 100 pounds back pressure and 203 wells show less than 50 per cent water.

At a meeting of the Winkler advisory committee on prorating practice with its chairman L. E. Barrows, of Fort Worth, the recommendation was made that prorating should be continued another six months from May 5. R. D. Parker as chief supervisor of the oil and gas division represented the railroad commission at the hearing.

New figures on potential production of the Yates field of Pecos county as recognized by the prorating committee credit the field with 2,694,474 barrels from 268 wells. This is on a basis reached by multiplying hourly gauges by 12 instead of 24 to gain a daily potential figure. The twelve hour computation is used to discount the obviously high potential of a full 24 hours which is regarded as certainly impossible of open flow attainment.

Even at the figure used it is generally recognized that half or perhaps a quarter of that potential would encourage water encroachment and the field will never be opened to such exploitation. Production continues to be held at 110,000 barrels daily under prorating practice.

Continental to Extend Testing in Mexico

HOUSTON, May 7.—Test operations of the Continental Oil Co. of Mexico, S. A., are to be extended into the states of Nuevo Leon and Tamaulipas. A series of shallow structure tests will be made for geological purposes, preliminary to deeper drilling in search of production.

The area of testing will be near the municipalities of General Bravo and Dr. Coss, in eastern Nuevo Leon, and will be inside leases and concessions totaling 400,000 hectaries in the two states mentioned. It is a considerable distance north of present shallow production of the Continental on the Forns property, mapped as ElLimon hacienda, in the western part of the general Panuco district.

Headquarters offices for Mexico of the Continental hereafter will be at Monterrey, concentrating operating organizations recently maintained at Laredo, Texas, and Mexico City. Phil Messenger, vice president and general manager, will be in charge. J. C. Tatum, chief geologist and assistant general manager, will head geological work.

Continental Oil Co. of Mexico, S. A., is the reorganized foreign subsidiary of Continental Oil Co. of Delaware, which took over properties formerly held by the Marland Oil Co. of Mexico, S. A., and the Compania Franco-Espanola, S. A., operating the Limon hacienda, near Valles, in the state of San Luis Potosi.

Dating back to original entry into Mexico, approximately 100 wells were drilled in the Valles district, some 50 of which produced oil and approximately 25 of which still yield quantities totaling several hundred barrels daily.

Modern Refining — Science and Practice

By Colonel George A. Burrell*

Article 23

Acid Recovery Plants

Light Sludges, Heavy Sludges, Composition of Sludges, Separating Plants, Concentration Plants

IN REFINING the various petroleum fractions, gasoline, kerosene, cracked and lubricating distillates and residuums, with sulfuric acid[1], a substance known as sludge is formed. It is produced mainly by the reactions between the unsaturated and aromatic hydrocarbons contained in the oils, and the acid. Sludges are generally divided into two classes; (a) Light oil sludge and (b) lubricating oil sludge, the latter being sub-divided into light and heavy lubricating sludges.

Light oil sludges usually keep liquid at all times, are easily handled with pumps or blow cases and submit readily to the first operation of "separation." Light lubricating sludges are black, pitchy, viscous fluids which flow readily when first drawn from the agitators; they oxidize and solidify rapidly and must be subjected to the separating operation almost immediately.

Heavy lubricating sludges, obtained from treating reduced crudes or "long residuums," are extremely heavy, pitchy masses and, in many instances, flow with great difficulty. They are either pumped from the agitators or are drawn by gravity, the latter operation being extremely slow. Solidification of this type sludge is almost instantaneous and it must be handled hot; immediately upon formation.

The sludge produced in treating light oils is relatively small in quantity; 3 per cent or less of the oil. That from the treatment of non-viscous lubricating oils may be several per cent of the oil and that from treating cylinder stocks may amount to 40 per cent of the oil.

Very little is known of the exact composition of sludges. It is generally agreed that unsaturated and aromatic hydrocarbons produce most of the sludge when refining with sulfuric acid, although Gurwitsch[2] has shown that while paraffins and naphthenes are resistant to sulfuric acid, they are at least partially dissolved by the acid in the presence of such substances as are attacked by the acid.

Acid or neutral esters of sulfuric acid are formed, as are alcohols, upon hydrolysis of the esters, naphthenic acids and nitrogen compounds. Pronounced polymerization and oxidation takes place. It is claimed that by this polymerization some heavier lubricating oil is formed at the expense of the less viscous oils.

Sulfuric acid has a pronounced effect on asphaltic material but of the nature of these changes little is known.

Oliensis[3] notes that diolefins are converted into an insoluble sludge; if this is not completely removed oil soluble colloids are formed on subsequent neutralization which give rise to water-in-oil emulsions. Monoolefins give oil soluble sulfuric acid esters which remain in the oil. Aromatic hydrocarbons give sulfonic acids which are removed by the alkali wash. Oxidation products such as naphthenic acids and phenols are formed.

Pilat and Starkel[4] found that acid sludge from refining Galician kerosene contained:

Up to 8 per cent sulfuric acid as sulfonic acid or sulfuric acid esters.

Fifty-two to 63 per cent free sulfuric acid.

Ten to 30 per cent organic tar.

Function of Acid Restoring Plants

Acid restoring plants perform two distinct operations; separation of the acid from the sludge, and subsequent concentration of the acid.

The separating plant performs the operation of extracting the sulfuric acid from the sludge.

The concentrating plant is that unit which receives the separated weak sulfuric acid from the separating plant and evaporates the excess water of dilution, leaving a concentrate of finished sulfuric acid.

Separating Plants

These generally consist of a series of lead lined tanks, having cone or slanting bottoms to facilitate drawing off the stratified liquors. They are equipped with open or closed lead or brass coils connected to steam and air lines. The bottoms are generally also lined with acid proof bricks.

These separators are always placed above the ground at elevations varying from 3 to 15 feet, depending upon whether the sludge is charged into them directly from the agitators or pumped into them from storage. Separators for light oil sludges can be placed at any convenient elevation because the sludge is easily transferrable but those for the lubricating sludges generally must be built relative to the agitator height.

It has been customary to operate most separators with open tops but more recent developments show them covered with lead lined steel plate, equipped with wooden vapor lines, each separator being isolated with a butterfly valve if necessary, and the vapor lines being connected to an absorption tower where the vapors are neutralized with a weak alkali, thus eliminating the fume nuisance[5].

[1]About 7,500 tons of 66° Be. sulfuric acid are used per day in the refining of petroleum; this includes new acid and acid restored in refineries.

*Consulting Chemical Engineer, Pittsburgh, Pa.

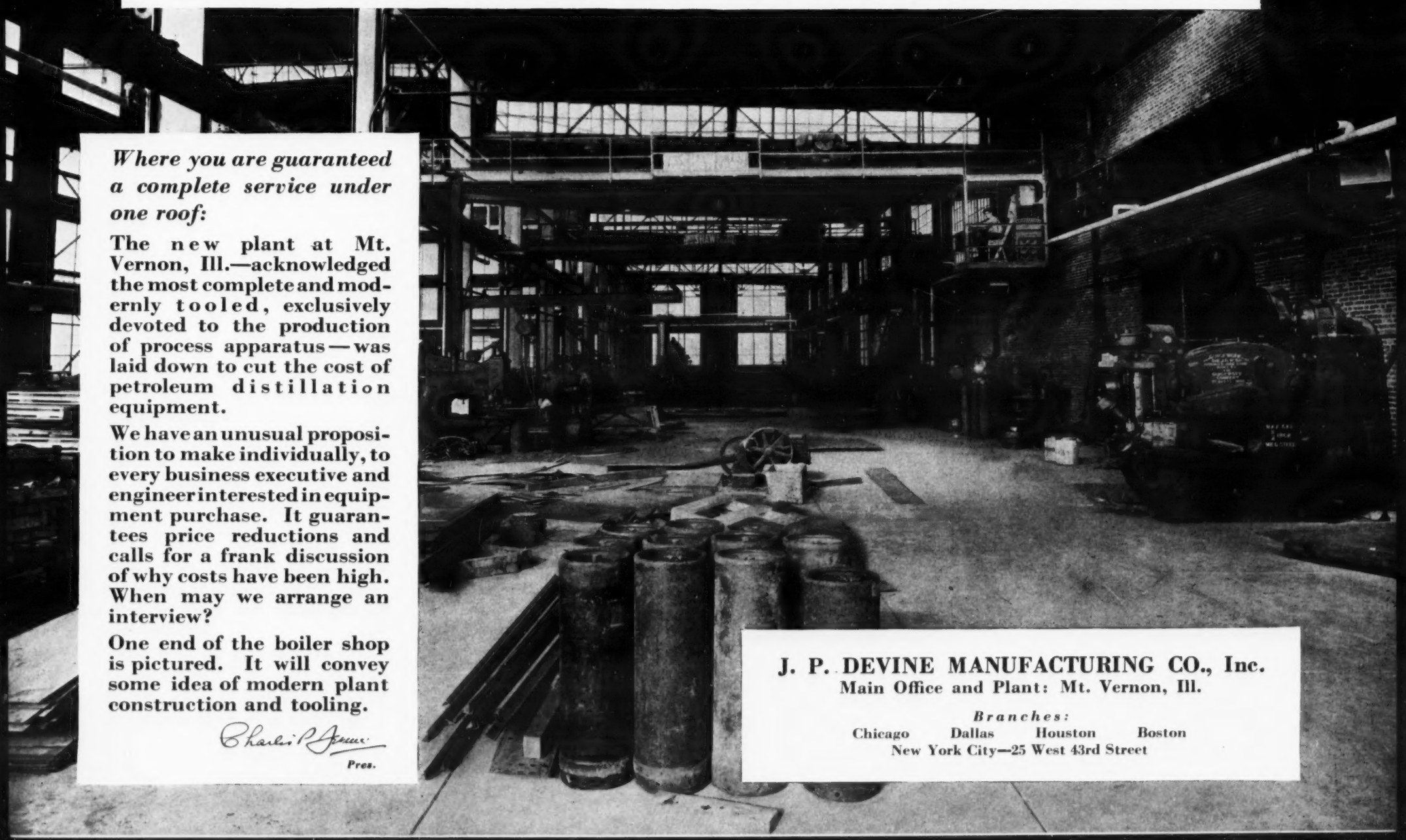
[2]"Scientific Principles of Petroleum Technology." L. Gurwitsch; translated by H. Moore (1927).

[3]Ind. Eng. Chem. 1923, p.690.

[4]Petroleum, 6, 2177.

[5]Separating plants of this type have been installed at the refineries of the Cities Service Refining Co., East Braintree, Mass., Shell Co. of California, at both Dominguez and Wilmington, Cal., by the United Lead Co. of N. Y.

"Petroleum distillation equipment from blueprint to shipment under one roof"



Where you are guaranteed a complete service under one roof:

The new plant at Mt. Vernon, Ill.—acknowledged the most complete and modernly tooled, exclusively devoted to the production of process apparatus — was laid down to cut the cost of petroleum distillation equipment.

We have an unusual proposition to make individually, to every business executive and engineer interested in equipment purchase. It guarantees price reductions and calls for a frank discussion of why costs have been high. When may we arrange an interview?

One end of the boiler shop is pictured. It will convey some idea of modern plant construction and tooling.

Charles P. Devine
Pres.

J. P. DEVINE MANUFACTURING CO., Inc.
Main Office and Plant: Mt. Vernon, Ill.

Branches:
Chicago Dallas Houston Boston
New York City—25 West 43rd Street

The separators have a manhead near the bottom to enable them to be cleaned easily, and are equipped with draw-off lines on the bottom of the cone or, in the case of slanting bottom vessels, on the lowest side at the bottom. These lines serve to draw off the weak acid, acid tar and acid oil, although in many cases, the acid oil is pumped over the top by means of a swing line or drawn off half way up the side through a special connection to this swing line. Separators usually vary from 100 to 300 pounds capacity. The latter size will serve one 1,000-barrel agitator. They frequently are about 15 feet deep and 15 feet in diameter.

The operation of these separating plants presents many difficult problems. Sludges, both light oil and lubricating oil, differ, and each refinery has its own local problem.

Many patents covering separation and a combination of separation and concentration, may be cited, namely, that of Farrar and Gill[6] involving mixing the sludge with hot water and heating, cooling, settling, separating and evaporating; Gray[7] who divested the sludge with water, air or steam until most of the acid had been removed and then heated with a steam spray until a pitchy mass was formed; of Van Tienen[8] who made the separation of acid and oils by dilution with water and then heating the mixture under pressure; the pressure separation method which is used in California[9]; and other methods.

Some patents have covered the mixing of sludge with chemicals like sodium sulfate and sodium nitrate. The only one of the patented separating processes in use in this country today is the one employed by the Standard Oil Co. of California, and developed by Davis and Davidson of that company. It is the best separating process in use today on light oil and on overhead lubricating oil sludges. Acid sludge to the extent of 1000 barrels per day is, along with steam and water, continuously passed through the separating tank at a pressure of about 15 to 60 pounds, and a temperature of about 350 F.

There is recovered about 80 per cent of the acid, of 87 per cent strength and one-half gallon of fuel oil per gallon of acid. The oil has a viscosity (Saybolt) of 300-400 secs. at 212 F. and a B.t.u. value of 14,500 per pound.

The tar in the pressure retort is subjected to a high temperature but a short time, and less oxidation and polymerization takes place than in the ordinary separating method, hence it leaves the retort in a more limpid condition. A remarkably clean acid is made.

Davis of the former Marland Refining Co. finds that the process cannot be used on sludges from residual lubricating oils—cylinder stocks, in that the mass in the pressure cooker cokes up.

The method of separating light oil sludges generally employed in refineries at the present time is to mix the sludge with that quantity of water, which, when the operation is finished, will give about a 30 degrees Be. weak acid. This mixture is cooked or agitated with live steam until the evolution of SO_2 gas has subsided and then allowed to settle. The cooking time is generally about two hours and the settling time four to six hours. During this latter period, the mass stratifies itself into three layers, viz: weak acid on the bottom, "acid tar" in the middle and "acid oil" on top. These liquids are drawn off to their respective storage tanks.

In some cases, the "acid tar" and "acid oil" mixture is given a second wash or "cook" after the weak acid has been drawn off. A small quantity of water is added and the mixture cooked and settled as before. The acid extracted in this operation is generally very weak (8 to 15 degrees Be.) and is called "sour water." It is used as the extracting agent in a subsequent separation of a fresh batch of sludge.

Numerous variations to this method are employed in refineries. In some cases, the water is just pumped on top of the sludge and the extraction accomplished due to the water and the acid mixing, the gravity of this mixture slowly increasing and until it gradually sinks through the mass of sludge. Yields are low.

Many plants employ a method which consists in heating the mixture of sludge and water by means of a closed lead steam coil. Thus emulsification is avoided. Others use both steam and air for agitation to assist in the oxidation of the "acid tars" and to get a more pronounced separation. Some cases are known where more efficient results are obtained by separating the weak acid at higher gravity, about 45 degrees Be.

The efficiency of the separating plants in handling light oil sludges is generally estimated between 70 per cent to 80 per cent, that is, this amount of H_2SO_4 contained in the sludge is recovered as weak acid.

The separation of light lubricating oil sludges is not a very difficult problem. The main requirement is that the separation takes place as soon as the sludge is drawn from the agitator. Practically all separations of this type are carried on by the batch method in the same type apparatus as employed in handling light oil sludge. About two parts of water to three parts of sludge, by volume, are used. This mixture is agitated with open steam until the odor of SO_2 in the fumes has practically disappeared and it is then allowed to settle and is drawn off. Emulsification seldom occurs.

Heavy lubricating sludges present a more serious problem. They are always separated by the batch method. In some refineries they are treated in the same manner as light lubricating sludges, merely mixed with a certain percentage of water and cooked very carefully with live steam. The cooking must be gentle because they show a great tendency to emulsify. Emulsions, which are formed, are hard to break.

The separated acid is always of a gravity less than 25 degrees Be. and the layer immediately on top of this acid is carbonaceous in character and contains large quantities of free acid. It is used as a fuel, after draining the acid by prolonged settling.

Other plants separate this type of sludge by using a low grade gas oil as a diluent to facilitate the separation; one part of gas oil, two parts of sludge and one part of water comprise the mixture. The latter is agitated with steam and settled as above. The separated acid is low in gravity, 20 to 25 degrees Baume, but the gas oil improves the quality of the acid and serves to render the carbonaceous material more usable as a liquid fuel.

Another method of handling this sludge is to cook lightly in a large separator and at the end of the "cook" pump in additional water, add the requisite quantity of gas oil and draw the sludge from the agitator immediately. Violent agitation with live steam is maintained and is continued for at least four hours after all the ingredients are drawn into the kettle. Settling is then allowed to take place. The resultant weak acid, of about 25 degree Be. gravity, is of good quality. Only a small portion of the carbonaceous material settles out as a semisolid.

It is noteworthy of this method that the same oil can be reused as a diluent several times before it is necessary to convert it to fuel use on account of low gravity.

"Acid Tar" and "Acid Oil"

Practice in the past in many of the larger refineries, was to render the "acid tar" as free from acid as possible by washing with hot water and then charging this acid-free tar into pitch stills and, by the customary method of reduction, convert it into pitches which were used for insulating, roofing, etc. They resembled the natural pitches in many of their specifications but were lacking in ductility. At the present time this practice is almost obsolete.

The "acid oil" and "acid tar" now are mixed by mechanical or air agitation and the mixture burned as fuel after being diluted with the fuel oil used in the plant. In some cases the

[6]U.S.P., 206,309 (1878).

[7]U.S.P. 923,427 (1909).

[8]U.S.P. 1,000,646 (1911).

[9]Continuous method used by Standard Oil Co. of California. Described by W. N. Davis at American Petroleum Institute Symposium, Chicago, Ill., Dec. 1927.

PIPING ENGINEERS

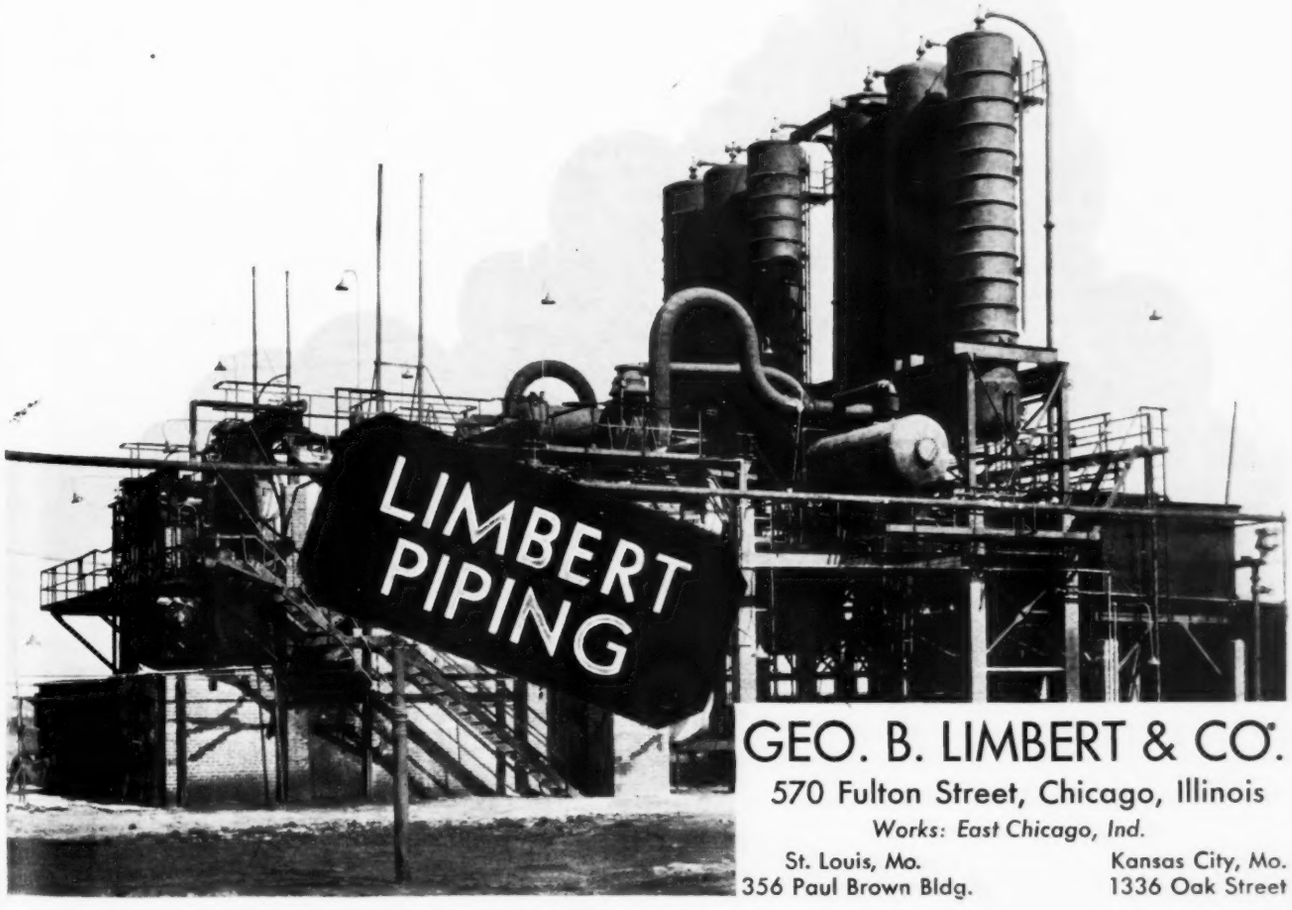
That Know How

Modern high pressure, high temperature piping demands skill, experience, and the best of manufacturing facilities.

These things Limbert has. Thirty years of specialized experience on difficult piping of all kinds with installations all over the world . . . A proven engineering staff capable of design and versed in the problems of installation as well as the problems of manufacture . . . A big plant with every modern facility for fittings, joints, and fabricated pipe from the simplest job to the most complicated power plant or refinery installation.

Use Limbert to manufacture ordinary requirements or to design and manufacture special piping for every power plant or refinery condition.

A typical cracking still installation furnished complete by Limbert.



GEO. B. LIMBERT & CO.

570 Fulton Street, Chicago, Illinois

Works: East Chicago, Ind.

St. Louis, Mo.
356 Paul Brown Bldg.

Kansas City, Mo.
1336 Oak Street

mixture is neutralized with waste caustic soda, soda ash or other alkali solution, settled and the salt solution drawn off. This eliminates the necessity of acid resisting lines, valves and fittings on the particular fuel system.

Also, in many known instances, neutralization renders the acid tar soluble in the acid oil and produces a homogeneous fuel.

Separated or Weak Acid

Weak acid is the product which is first removed from the separator, the recovery of which is the primary motive for operating the separating plant.

The weak acid will vary between 20 and 35 degrees Be., is substantially free from any pungent odors, straw to dark brown in color, free from suspended tars or oils and, if well separated, is ready for concentration to any point to 60 degrees Be. and above.

Theoretically, well separated acid should contain nothing but sulfuric acid diluted with water; practically it is not possible to get this result except by the employment of some very expensive methods.[10]

Frequently impurities in the acid are expressed in percentage of carbon,[11] but data are of little or no value because of the many forms in which the carbon may be present. Different refineries treat their products with varying strengths of sulfuric acid, 60, 66 degrees Be. or 98 to 104 per cent acid. All of these acids produce different types of sludges which, when separated, produce different products in the weak acid.

A partial decomposition of the products can be effected by the application of heat but the temperature of decomposition depends upon the type of products present.

Sometimes weak acid containing a small quantity of carbon, say 0.3 per cent cannot be concentrated as readily as another acid, 3 per cent carbon. In the former the carbon may be present as organic acids which only decompose at very high temperatures during the final stages of concentration, while in the latter it may be present in the form of organic acids which decompose at normal temperatures employed in separating.

On the other hand, there are many cases where the difficulties of concentration and the yields are in direct proportion to the carbon content of the weak acid charged to the concentrator. Weak acids separated from sludges which are derived from the treatment of pressure distillate, cracked kerosene and heavy lubricating oils, come under the first classification, while those separated from straight run light oils and light lubricating oils come under the second class.

It can be stated that the carbon content of a weak acid may be indicative of the possibilities to concentrate that particular acid, but is not conclusive evidence and further investigation is usually advisable.

Concentrating Plants

Several different systems of concentrating the separated or weak acid are in use at the present time. Early American refinery practice was to eliminate the concentrating phase by selling the weak acid to other refiners equipped to concentrate it; selling it of 50 degrees Be. strength to fertilizer plants, or disposing of it through the refinery sewer to any outlet stream which was available. This latter method sooner or later creates a nuisance intolerable to residents of the surrounding country.

One of the first patents on concentration was that of R. G. Loftus[12] in which the spent acid (sludge) was first diluted with 50 per cent water, agitated, settled and the weak acid drawn off. This weak acid was then concentrated to about 1.65 to 1.70 specific gravity and again diluted and settled. The weak acid was again drawn off and finally concentrated in glass bottles to 1.845 specific gravity.

Penissant (1878) and Gronsilliers (1888) also were granted early patents. The latter added sodium sulfate to the separated acid and the bisulfate was precipitated by boiling and evaporating. The precipitate was dried and the acid recovered by heating to a moderate red heat.

Wedge[13] described the usual process for working up sludge acid, heating in a preliminary lead pan to 110 C. and then passing it to three shallow lead pans where it is surface fired to 166 C. and finally to two more lead pans and then two iron pans. He mentions 25 per cent loss of acid. Sodium nitrate was employed in a process of Waring and Brackenridge[14] to oxidize carbonaceous material.

Many other patents were granted, here and in foreign countries, covering this subject, but none became practical until 1920. At the present time there are four important processes employed for concentrating weak acid.

(a) Pan and Bench system.[15]
(b) Chemico process.[16]
(c) Simonson-Mantius vacuum process.[17]
(d) Geyser Action process.[18]

The finished 66 degree Be. acid from any of these processes is always very black in color and contains varying percentages of free carbon in a fine granular form. For a gravity of 66 degrees Be. the acidity averages 88 to 90 per cent. The acidity and other characteristics of the finished acid depends upon the quality and quantity of organic acids, tarry matter, and free carbon contained in the weak acid charged to the concentrator.

In most refineries the weak acid coming from the separator at a density of about 30 degrees Be. is first concentrated to about 56-61 degrees Be. This partially concentrated acid is then allowed to settle, to remove tarry matter. The setted acid is then concentrated to 60 degrees Be. Some refiners use about 60 and 66 degrees Be. acid for treating purposes. Frequently the acid is concentrated to 60 degrees Be. only, and part of the acid is so used, the remainder being brought to 66 degrees Be. with fuming sulfuric acid containing 20 per cent sulfur trioxide.

Where light oils and cracked distillates are only treated with 60 degrees Be. acid, relatively simple and inexpensive apparatus can be used to recover the acid. If contact sulfuric acid plant is operated to produce make-up acid, the 61 degree Be. acid can be used in the absorbers of this plant and be reinforced with sulfur trioxide to any acid strength desired.

Some acids, especially those from sludges obtained from the treatment of highly cracked distillates, can only be concentrated to a certain point, after which decomposition begins and the acidity remains practically constant. Some investigators claim that appreciable percentages of nitrogenous compounds in the acids cause concentrating difficulties. Some acids are not susceptible to concentration; they can be carried to a certain temperature, above which they solidify to a gelatinous-like material.

Black restored acids of the requisite percentage of H_2SO_4 fully serve their purpose in refineries insofar as treating efficiency is concerned. They give results substantially analogous to new acid.

Carbon in the combined form has no detrimental effect upon the treated oil and experimentation has shown that it does not build up by repetition through the cycle; it is removed from the acid by the separating and concentrating process, and the restored acid, after passing through 6 or 7 cycles and being fortified by fuming acid to maintain the refinery acid requirements, reaches a point of equilibrium where the percentage of carbon remains substantially constant.

---

[10]Leonhard, Dufford & Hough. U.S.P. 1,554,226 (1925). This embodies electrolytic oxidation of the carbon in the presence of small quantities of manganese sulfate. Another method is oxidation with nitric acid as employed by the General Chemical Co.

[11]This is generally determined by the wet combustion method, involving the use of chromic acid or potassium dichromate. Carbon dioxide produced is absorbed in a known weight of soda-lime or standard berium hydroxide solution.

[12]U.S.P. 43,157 (1864).

[13]J. Soc. Chem. Ind. 1899, p.345.

[14]U.S.P. 643,578 (1900).

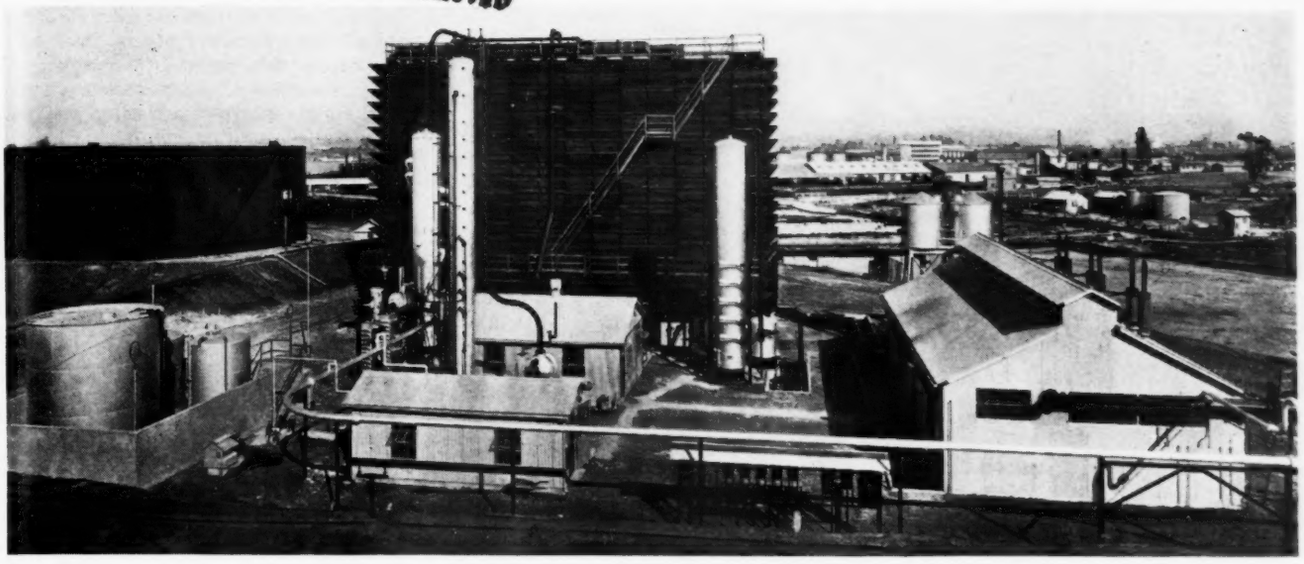
[15]U.S.P. 1,005,425, E. B. Ryan (1918).

[16]U.S.P. 1,195,075; 1,264,509; 1,264,182 (1918). I. Hechenbleikner & Chemical Construction Co.

[17]U.S.P. 1,384,978 (1921). W. H. Simonson and O. Mantius.

[18]U.S.P. 1,232,109 (1917) Skoglund.

ADVERTISING PAGES REMOVED



General view of the Richfield Oil Co. vapor recovery plant at its Watson, Cal., refinery, illustrating the arrangement of equipment

Intercoolers Used on Absorber At Vapor Recovery Plant

By H. R. Linhoff*

THE Richfield Oil Co. of California has just completed and placed in operation at its Watson refinery, Watson, a modern vapor recovery and fire prevention system that contains a number of unusual features. The plant is designed to handle a maximum of 5,000,000 cubic feet of vapors per day at 40 pounds per square inch gauge pressure, giving a leeway in excess of present needs of the refinery.

The science of vapor recovery and fire prevention at refineries is one of the most interesting and profitable phases of the petroleum industry. The Watson plant cost approximately $200,000 to construct, which, on a basis of 30 days practical operation, will be amortized within three months and will show a profit of about $750,000 annually.

The term "vapor recovery" as used in the petroleum industry, applies to the recovery and utilization of production, refinery and tank farm vapors, which if not recovered would otherwise be wasted. In the past the loss of these vapors has often been referred to as "evaporation loss" and producers and refiners have been inclined to neglect the importance of these losses.

It is now a well known fact that pumping of oil and changes in temperature in a tank farm actually cause vaporization of certain valuable fractions of the oil, practically all of which can be profitably recovered and the remainder used for fuel. Losses of this nature can be reduced in most cases by insulation, water seals and floating roofs, but they cannot be completely eliminated without some system of collection and recovery for the vapors.

In general, a vapor recovery and fire prevention system such as found in a modern refinery and its tank farm serve several purposes. First, it utilizes receiving house and tank farm vapors, extracting therefrom a product similar in quality to natural gasoline and leaving residue or dry gas available for fuel. Second, it eliminates a serious fire hazard through collection and proper disposition of inflammable waste vapors. Another important function of such a system is the reduction in air content of the vapors in the tanks.

In addition to the usual tank vent valves such a system includes explosion relief valves, flame arresters, tank regulators, vapor collection and repressuring pipe line systems, a compression plant, an absorption plant and a stabilizer plant.

Partial removal of the gasoline fractions from the wasted vapors is obtained by compression and cooling and the remainder by absorption in oil, redistillation and condensation.

The reduction in air content of the vapors in the tanks is secured by "repressuring" the tanks with air-free dry gas as it is required. When a tank is being pumped out or when the contents of a tank are dropping in temperature, and the release of vapors from the oil is not sufficient to fill the vapor space caused by the rate of pumping or drop in temperature, instead of taking in air to fill the vapor space, air-free dry gas is admitted. The object in reducing the air content of the vapors in tanks is primarily to reduce the fire hazard and, if tanks are properly equipped, and operated, the air content in their vapor spaces will rarely be sufficient to support combustion or to produce an explosive mixture. Another object in reducing the air content of the vapors in the tanks is to reduce oxidation and cut down the rate of corrosion.

The principal objects of a complete vapor recovery system are the recovery of gasoline and dry gas from otherwise wasted vapors, and the reduction in fire hazard to the entire refinery by proper disposition of these vapors.

With the development of the oil fields in Southern California during the past three years, the increased stocks of high gravity crude oil and the increased throughput of our re-

*Manager, gas department, Richfield Oil Co. of California.

VAPOR PHASE REFINING

WILL

Increase your gasoline yields,
Improve your gasoline quality,
and
Reduce your refining costs.

THE GRAY PROCESSES CORPORATION
961-975 Frelinghuysen Avenue
NEWARK, NEW JERSEY

"What About The OILGRAM?"

—asked the executive of a gasoline company on the west coast recently of a Tulsa oil man. His answer was . . .

"If you were to wire me for Mid-Continent gasoline prices today, I would phone a member of the OILGRAM staff, and my reply to you would be the *gist of what he told me.* The OILGRAM staff is in direct and close contact with the markets almost every hour of the business day. *They know their business.*"

You too, can have the benefit of this close contact with all phases of the market at all the principal refining and marketing centers.

The service costs only $65 for 6 months, or $100 a year, payable in advance. Approximately 40 cents a day—less than the cost of one wire or one phone call.

Avail yourself of this fast, daily market service today—send your order with check to the nearest mailing point.

TULSA—904 World Bldg.
CHICAGO—35 East Wacker Drive
NEW YORK—342 Madison Avenue
CLEVELAND—1213 West Third St.

fineries, several new vapor recovery and fire prevention systems have been erected in this area. Companies already operating vapor recovery systems have enlarged existing systems or installed new systems to handle waste vapors from new tank farms and distillation units.

Richfield's new system at Watson is composed of tank regulators, a vapor collection and repressuring circuit, a three-unit compression plant, an absorption tower, a distillation system, a high pressure stabilizer and a special cooling tower, built under the supervision of H. R. Linhoff, manager of the gas department.

Source of Vapors

Vapor is supplied to the system from the look boxes of 5 crude oil distillation units and 75 active tanks, containing high gravity crudes, high gravity refined oils, motor fuel and natural gasoline. The average vapor collected and passed through the recovery plant contains from 10 to 12 gallons of gasoline per thousand cubic feet.

Regulators

Collection of the gas is effected by the application of vacuum through tank regulators supplied by the Wilkenson Controller Co. These regulators serve a dual purpose and consist of a pressure regulator and vacuum regulator controlled by a pilot valve operated by a single diaphragm. When the pressure in the tank builds up to a predetermined point, the pressure regulator allows vapors to pass from the tank into the collection line. The vacuum regulator is connected to an air-free dry gas line and opens when the vacuum in the tank drops to some predetermined point and allows dry gas to fill the vapor space in the tank.

The pressure and vacuum regulators are of the motor valve type actuated by the dry gas pressure used for repressuring the tanks. This feature insures a sensitivity well under 0.1-inch of water vacuum or pressure.

A similar controller without the vacuum regulation feature is used to collect waste vapors from the distillation units. Collection lines from the water separators and look boxes are run into a header leading to the regulator located near each receiving house. This regulator is actuated by the pressure in the header instead of by dry gas pressure as in the case of the tank regulators.

In addition to the tank regulators and pressure regulators the tanks are also equipped with vent valves, explosion relief valves and flame arresters supplied by the Vapor Recovery Systems Co.

Collection and Repressuring Lines

Passing from the tanks and receiving houses the waste vapors are taken through suitable lines laid so

as to drain to a central point. Where the topography prevents complete drainage, means have been provided for removing and disposing of the condensate as it accumulates.

Removal of the condensate is automatically effected by a vacuum unloader supplied by the Trumble Gas Trap Co. An interesting feature of this unloader is its ability to handle water, gasoline and emulsions at the same time with perfect satisfaction.

In order to protect the compression plant against failure of this equipment a special horizontal line scrubber is installed in the main collection line near the plant. This scrubber is also equipped with a vacuum unloader of the same design.

Compression Plant

The compression plant used for collecting and discharging the waste vapors to the absorption tower consists of three 180 brake horsepower, type XG, direct connected, Ingersoll-Rand gas-engine compressors. These machines are designed for compression of vapors from 10 inches mercury of vacuum to 40 pounds per square inch gauge pressure. Each unit is equipped with one adjustable clearance head to facilitate handling variable loads. By means of this device and the number of compression units a constant vacuum can be maintained on the suction side of the compressors.

Another interesting feature of the compression plant is the intake header connection designed to prevent condensation from accumulating in the line connecting the cylinder with the intake header. Vapor is taken from the top side of the header through a 180-degree tube turn and condensation is removed from the lower side of the header as it accumulates. As a safe guard against condensation on the top side of the valves in the suction lines to the compressor cylinders, each valve is drilled and tapped above the valve disc. Too much emphasis can not be laid on these particular points since slugs of gasoline or water might seriously damage the compressors in starting.

In addition to these features each unit is equipped with a separate lubricator to feed castor oil to the compressor cylinders. This installation is made necessary due to the condensation of gasoline in the compressor cylinders. Castor oil is not miscible with gasoline and affords a very satisfactory means of lubricating the cylinder walls of compressors handling vapors of high gasoline content.

Absorbers

As previously stated partial removal of the gasoline fractions from the vapors in a recovery system is effected by compression and condensation and the remainder by absorption in oil, redistillation and condensation. Hence, the absorber is probably the

LOW TEMPERATURES A MODERN PROBLEM

Today's demand is for lubricating oils that will work at extremes of cold. The cold processed product is a practical profit producer... the result of Vilter refinery refrigeration. ¶The Vilter refrigeration systems are based on *specialized* experience extending over sixty-two years ... from the very inception of commercial refrigeration. *Naturally* the refiners turn to that experience for a practical solution of their complex problems. ¶With an impressive number of decidedly successful installations to its credit, Vilter experience prevents grave mistakes and points the way to low cost operating efficiency that insures profits to you.

Bulletins, data and other specific information are yours for the asking.

THE VILTER MANUFACTURING CO.
1074 CLINTON STREET ..... MILWAUKEE, WIS.
74-30

Vilter
ICE-MAKING AND REFRIGERATING MACHINERY

New Thoughts on Filtration

YOU know the work the Sweetland Filters are doing in connection with contact work. You know what Kelly Filters are doing on residuum.

But here's a thought that may be new—why not use the special Sweetland Filter at the lube oil loading station?

It provides a cheap form of customer insurance by loading clean oil *every shipment.*

OLIVER UNITED FILTERS Inc.

SAN FRANCISCO, Fed. Reserve Bank Bldg. NEW YORK, 33 West 42nd St.
CHICAGO, 565 Washington Blvd. LONDON, W. C. 1, 150 Southampton Row
PARIS, 63 Ave. des Champs Elysees
T. L. Genter, Concessionaire

most important piece of apparatus in a recovery system.

In the Watson plant every care was exercised in the selection of an absorber which would give maximum yields of the useful gasoline fractions in the wasted vapors.

The tower selected was supplied by the Engineering Research and Equipment Co. according to the specifications of the gas department of Richfield Oil Co. It is a 16-plate, bubble-cap absorber, capable of handling a maximum volume of 5,000,000 cubic feet of gas per day and a maximum oil circulation of 500 gallons per minute at 40 pounds per square inch gauge pressure.

A feature of particular interest in this absorber is the intercooler system for removing the heat of absorption from the absorption oil. In this system, there are five cooling sections located between the first, second, third, fourth, fifth and sixth plates of the absorber. They were supplied by the Griscom-Russell Co. and are known as "U" type "K-fin" cooling sections. They consist of an aluminum tube sheets fitted with "U" shaped aluminum tubes. Each tube is wrapped with an aluminum ribbon at right angles to the tube to form a heat collecting fin. This is made necessary due to the relatively low velocity of the oil across the tube and the frothy condition of the oil. Each section contains 406 square feet of effective cooling surface.

The sections are mounted on blank plates between the bubble plates and may be removed through a rectangular opening on the side of the tower. They are manifolded in parallel and connected to a closed water cooling circuit.

By means of these intercoolers the heat of absorption is removed as it is evolved and a more highly saturated fat oil is obtained. Too much emphasis cannot be placed on this feature since the mean temperature of the oil in an absorber has a very definite effect on the extraction efficiency that can be obtained with a given oil-gas ratio.

Other benefits derived from the use of absorber intercoolers are the saving in the first cost of the oil circulation, distillation and oil cooling facilities and the saving in operating expense.

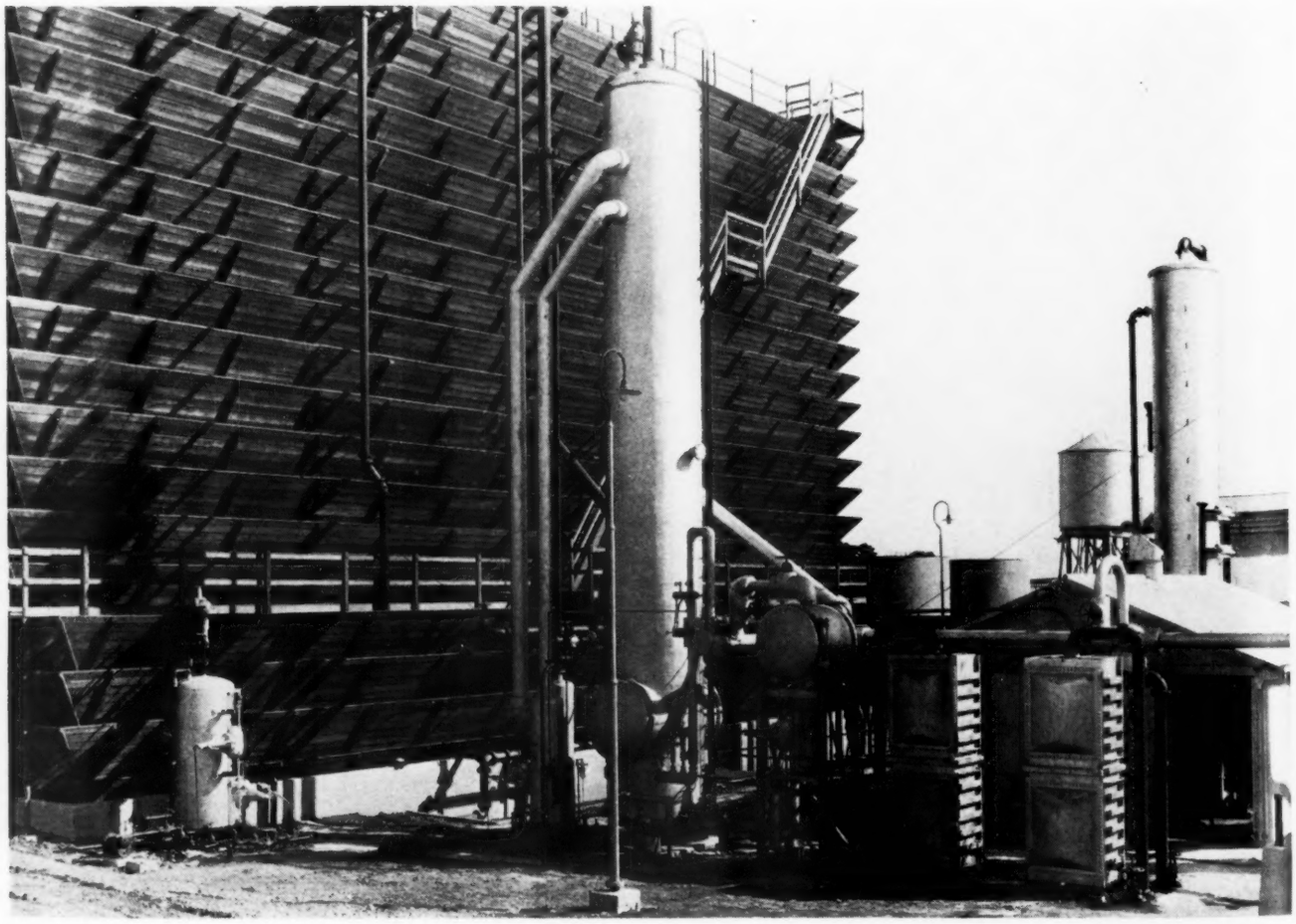
Pumping and Distillation System

Oil and water circulation for the absorption plant is supplied by means of a General-Electric-Cameron triple pump unit. A similar set of pumps direct connected to a Terry Steam Turbine serves as a standby for the electric unit. Each unit has a capacity of 1600 gallons of water and 300 gallons of lean oil per minute.

The distillation unit is composed of two Southwestern Engineering Corp. heat exchangers, a Southwestern Engineering Corp. steam preheater and an Engineering Research & Equipment Co. combination stripper and fractionator.

Vapors from the fractionator are taken to the top of the water cooling tower where they pass through a primary box-type condenser composed of Griscom-Russell bent tube sections. From the primary condenser the condensate and uncondensed vapors pass into a reflux accumulator. The uncondensed vapor and excess condensate are taken to the final condenser and reflux is withdrawn from the accumulator and dehydrated by means of a water separator located on the ground level. Reflux is discharged over the top of the fractionator by the difference in elevation between the reflux accumulator and the top of the fractionator. This distillation circuit is designed to handle a normal load of 30,000 gallons of gasoline per day and is capable of handling a maximum of 50,000 gallons per day. The end point of the finished product is controlled by a Foxboro temperature controller set to maintain the proper temperature at the top of the fractionator.

The lean oil leaving the stripper is forced by the stripper pressure through one heat exchanger and is



Comprehensive view of distillation system with water separators and gasoline accumulator on the left

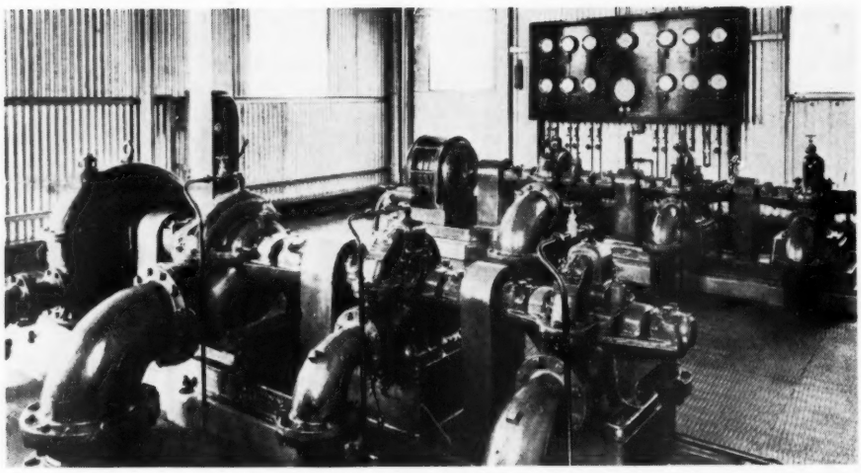
Beware of a license contract under which you pay all in the beginning and which may leave you in the lurch in the end

It is usually good policy to pay for what you get as you get it

But if you do pay all in the beginning, be sure you won't have to pay again to someone else in the end

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor



Triple pump units for water, lean oil and fat oil with instrument board and fractionator control in back ground

picked up by the lean oil pump and discharged through the two heat exchangers and Griscom-Russell bent tube cooling sections to the absorber.

Gasoline from the final condenser accumulates in a water separator equipped with Neilan-Schumacher liquid level regulators and is discharged to two 4000-gallon vertical surge tanks. Gasoline from the accumulator scrubber and the final condenser is metered separately by means of American Liquid Meter Co. meters. Vapors from the gasoline accumulator and storage tanks are taken through Neilan-Schumacher back pressure regulators to the absorber and compression plants respectively.

Stabilizer

The stabilizer plant is composed of a 50-plate column, a kettle, a reflux condenser, a reflux accumulator and a heat exchanger. This apparatus was furnished by the Southwestern Engineering Corp. according to the specifications of the gas department of Richfield Oil Co. of California, under the direction of H. R. Linhoff, manager.

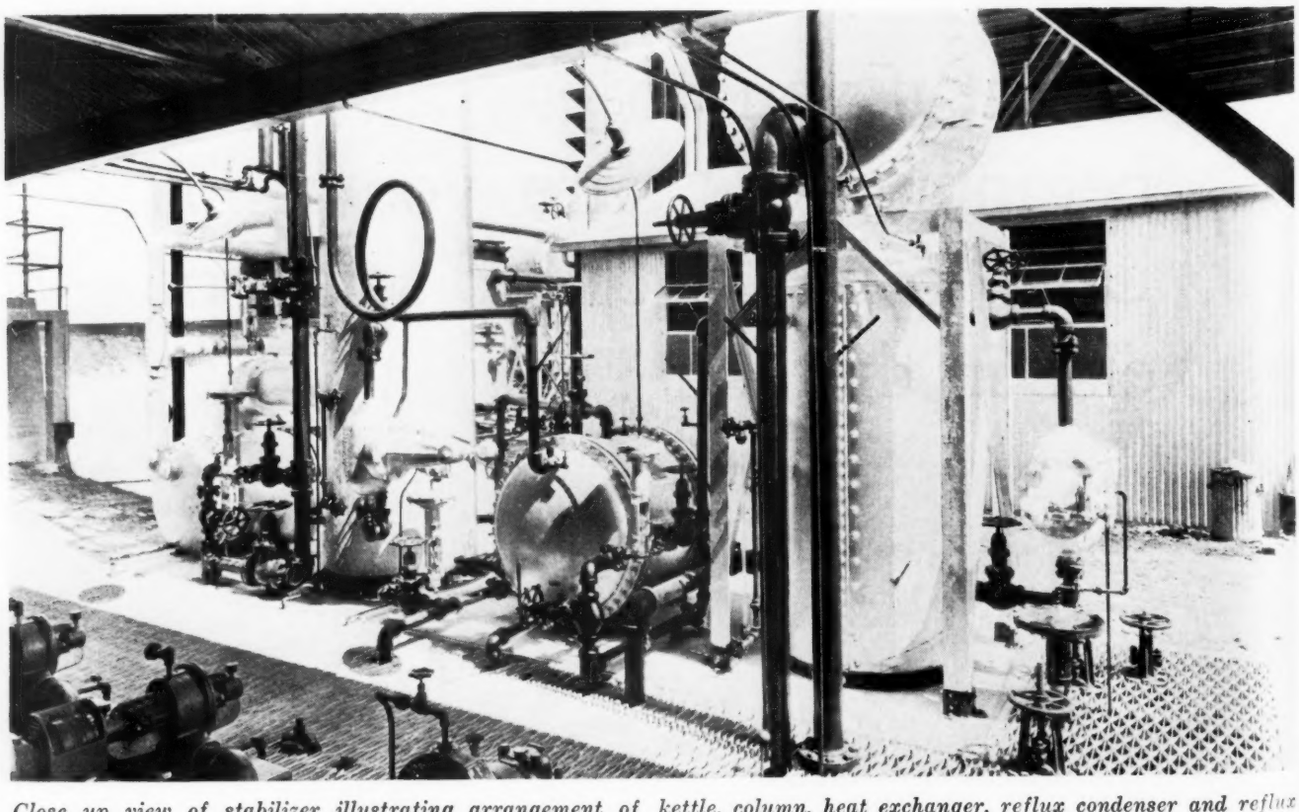
Auxiliary equipment for this plant consists of Cameron simplex feed pumps, motor driven Westco reflux pumps, motor driven Cameron centrifugal water pumps, Neilan-Schumacher motor valves, Neilan-Schumacher liquid level regulators and Foxboro instruments and pressure gauges.

The plant differs from the usual installation in that no gasoline cooler is employed to cool the finished gasoline. The heat exchanger is designed to utilize the total amount of heat available in the finished product to heat the feed to the column. Under these conditions the gasoline leaves the heat exchanger at about 80 degrees Fahr. and requires no further cooling.

Control of the operation of the column is obtained by a differential feed controller, a differential reflux controller and a recording top temperature controller. The top temperature is maintained constant by regulating the amount of steam admitted to the kettle. This method of control is made necessary due to the variation in the composition of the feed during the day.

Cooling Tower

The cooling tower employed in this plant is a 14-section "KKC-3" atmospheric Fluor cooling tower with a primary box-type condenser located on the top of the tower. Condensation in the primary condenser is secured by passing the entire volume of water, circulated over the tower, across and counter current to the stream of vapors. Water leaving the weirs of the condenser box passes through a common flume to three cross distributing troughs which feed the water to three lateral distributing troughs. Another feature of interest in this tower is the redistribution system.



Close up view of stabilizer illustrating arrangement of kettle, column, heat exchanger, reflux condenser and reflux accumulator with motor valves and liquid regulators

The water is collected half way down the tower and redistributed by means of cross collectors and redistributing troughs. This feature reduces the windage loss and increases the efficiency of the tower through uniform deck loading.

Griscom-Russell bent tube sections are mounted in the "C" or coil section of the tower to cool the gas and oil and to condense the gasoline and recompressor vapors. A collection and redistribution system is used to collect and redistribute the water over the Griscom-Russell bent tube sections. Each bay of the tower is equipped with easily operated gates to control the volume of water delivered to the cooling sections.

Under normal conditions with a five-mile wind this tower is capable of cooling 1600 gallons of water per minute from 88 degrees Fahr. to an average temperature of 70 degrees, or 5 degrees above wet bulb temperature. Loss of water due to windage is reduced to a minimum through the use of adjustable spray deflectors mounted on the lee side of the tower between the decks.

The over all dimensions of this tower are 28 feet wide by 91 feet long by 55 feet high. It is constructed of select California redwood lumber, brass bolts, copper nails and so designed that no guy wires are necessary.

This plant was erected by the Construction Department of the Fluor Corp. Ltd., according to the design of the gas department of Richfield Oil Co.

Physiological Effect Of Vapors Studied

CLEVELAND—The physiological response of human being exposed to vapors of commercial petroleum hydrocarbons increases with increasing number of carbon atoms in the hydrocarbon molecule, according to the results found by the Health Laboratory Section of the U. S. Bureau of Mines in an extended investigation of the effect of petroleum vapors on the human mechanism. The odors of hexane and heptane are easily noticeable in concentrations below their lower inflammable limits (about one per cent by volume in air), and produce symptoms of vertigo after a few minutes of exposure to these concentrations.

Such physiological symptoms are not produced distinctly by exposure for a similar length of time to vapor concentrations of pentane, butane, and propane below the lower inflammable limit of these substances (1.5 to 2.5 per cent by volume in air), the odor of pentane is indistinct, and that of butane and propane are almost unnoticeable under these conditions. The bureau therefore believes that a warning agent should be added to hydrocarbons such as butane and those of lower molecular weight which are dispensed for use as fuel gas in homes and similar places.

The details of this investigation, and the results obtained and conclusions arrived at have been published by the bureau as Report of Investigations No. 2979, "Odor Intensity and Symptoms Produced by Commercial Propane, Butane, Pentane, Hexane and Heptane Vapors," by F. A. Patty and W. P. Yant. According to the report, commercial heptane is readily preceptible in air in concentrations of the order of 0.0035 per cent, pentane at about 0.026 per cent, while a concentration of nearly 5 per cent of propane is required for definite perceptibility.

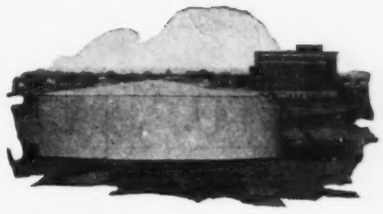
Purification of the hydrocarbons employed had little effect on the physiological response shown by test subjects, and on the perceptibility of the lower hydrocarbons, but the concentration of the higher ones required for distinct perceptibility is much higher, heptane requiring 0.04 per cent.

The tests were carried out by exposing three to six persons to different concentrations of the various hydrocarbons within an enclosed space for differing periods of time, and noting the effect on each subject as to odor and physiological reaction. The results obtained are tabulated below, and give some idea of the relative effects of the hydrocarbons.

Copies of the report may be obtained without charge from the Publications Section of the Bureau of Mines, Washington, D. C., or from the bureau station at Pittsburgh.

Physiological response of persons exposed for short periods to paraffin hydrocarbon vapors

Substance	Vapor in air, per cent	Duration of exposure, minutes	Symptoms
Propane	Up to 1.0	10	No symptoms.
Do.	10.0	2	Distinct vertigo.
Butane	Up to 1.0	10	No symptoms except drowsiness.
Pentane	Up to 0.5	10	No symptoms.
Hexane	0.2	10	No symptoms.
Do.	0.5	10	Marked vertigo.
Heptane	0.1	6	Slight vertigo.
Do.	0.2	4	Slight vertigo.
Do.	0.35	4	Moderate vertigo.
Do.	0.5	4	Marked vertigo, inability to walk straight, hilarity.
Do.	0.5	7	Marked vertigo, incoordination of space, some cases of hilarity.
Do.	0.5	15	Marked vertigo and incoordination; hilarity lasting for 30 minutes after exposure.



Have you adequate fuel oil tankage?

Adequate fuel oil storage capacity allows you to make money on price variation and makes you independent of uncertain deliveries.

We build field erected tanks in all standard capacities, as well as special sizes. The tank shown above holds 80,000 bbls. Ask our nearest office for booklet on oil storage tanks and quotations.

Chicago Bridge & Iron Works

Cleveland.....2206 Union Trust Bldg.
New York.....3145 Hudson Terminal
Philadelphia.....1614 Jefferson Bldg.
Boston.....1516 Consolidated Gas Bldg.
Chicago.....2125 Old Colony Bldg.
Detroit.....1513 Lafayette Bldg.
Birmingham.....1534 50th Street, N.
Dallas.....3339 Magnolia Bldg.
Atlanta.....1050 Healey Bldg.
San Francisco.....1060 Rialto Bldg.
Havana, Cuba.....Apartado 2507

Fast---economical equipment cleaning

TRY this economical method of cleaning pipe fittings, valves and other miscellaneous equipment. Soak the parts for a short time in a tank containing a hot solution of an Oakite material. With little or no scrubbing or scraping, equipment will come out *clean*, every trace of oil, dirt and muck removed, in a fraction of the usual time.

Write for booklet "Oakite in the Oil Industry." It gives directions for cleaning field equipment, and for doing scores of oil field, refinery, or service station jobs economically. Copy on request. No obligation.

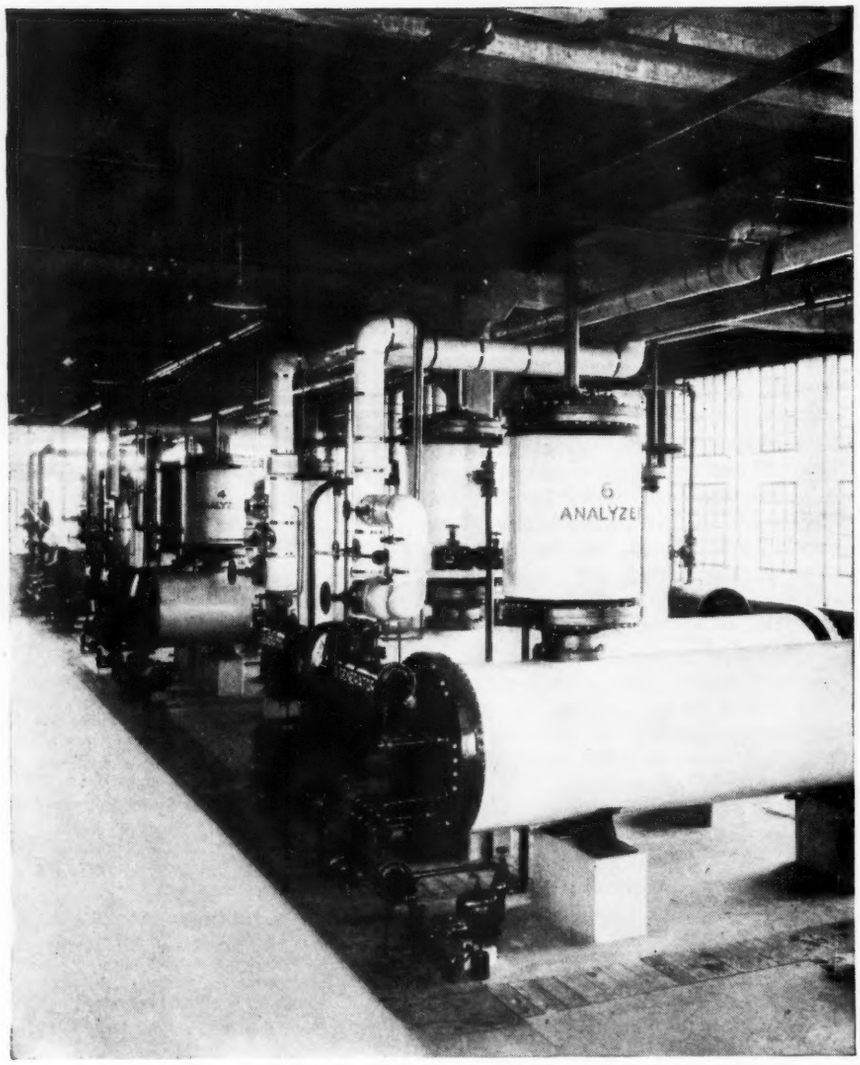
Oakite Service Men, cleaning specialists, are located in leading industrial centers of U. S. and Canada.

Manufactured only by

OAKITE PRODUCTS, INC.
42C Thames St., New York, N. Y.

OAKITE
Industrial Cleaning Materials and Methods

ABSORPTION REFRIGERATION *for* ANY *temperature*... EVERY *capacity!*



UNSURPASSED efficiency is the verdict of America's leading refiners when Carbondale Absorption Refrigerating Systems chill the oils down to —40° F. and lower. But this result was a foregone conclusion. Carbondale has kept abreast of the refiners' needs for more than 38 years, has cooperated continuously in effecting efficient wax removal at ever decreasing temperatures.

Carbondale refrigerating systems are performance-proved in the service for which they are recommended. Whatever your refrigerating requirements — *every capacity, any* temperature — you will find a Carbondale System that fits your needs precisely. And the cooperation of our engineers, whose knowledge is seasoned by many years of service to refiners, is freely offered.

Call on Carbondale for refrigeration!

THE
CARBONDALE MACHINE CO.
Carbondale, Pa.
Branches in principal cities

Carbondale Refrigeration

CARMACO *for Refiners*

CARBONDALE AMMONIA COMPRESSION REFRIGERATING SYSTEMS USE WORTHINGTON "FEATHER VALVE" COMPRESSORS

New Equipment

Leeds and Northrup Co., 4901 Stenton Ave., Philadelphia, has recently issued a new series of bulletins on control instruments that are of interest to the oil refiner. These bulletins are profusely illustrated with cuts of the different types of apparatus, methods of installation, operating formulae and typical data sheets and charts.

Catalog No. 20-1930 shows the line of indicating and recording galvanometers offered, including reflecting, high sensitivity A. C., pointer and vibration galvanometers, mounting devices and accessories.

Bulletin No. 781, which is No. 5 in the Power Plant Series, shows a complete line of CO_2 indicators and recorders, types of installation and discusses the use of these instruments, their advantages, and the effect of difference flue gas constituents on the operation of the instruments.

Bulletin, No. 660, No. 6 in the Power Plant Series, discusses the automatic control of combustion for boiler furnaces, itemizes the instruments for this purpose, and presents in detail the layouts for control of both stoker-fired and powdered-fuel-fired furnaces. A list of L & N publications is given on the last page of the bulletin.

* * *

Industrial Chemical Sales Co., Inc., 230 Park Ave., New York City, cooperating with C. L. Mantell, Consulting Engineer, has issued a new booklet on the development and uses of Activated Carbon, which may be obtained by writing to the above address.

The history of the development of this type of filter agent is followed by discussions of the methods of application of activated carbon to the problems of the manufacture of various organic and inorganic chemicals, glycerine, and beet and cane sugar, acids, syrups, drugs and solvents, and vegetable and animal oils, particularly cottonseed and fish oils, lard oil, etc. The different grades of Nuchar are discussed, with short notes regarding the application of each to specific problems.

* * *

Arthur G. McKee & Co., Cleveland, Ohio, has distributed a new pamphlet showing the types of installations it is installing and prepared to install in the different industries it serves as engineers and contractors. Gas cleaners, stoves, steel and other mill construction, cracking rerunning, treating and storage units are illustrated by numerous photos of actual installations, with partial list of clients and plants built in different countries.

* * *

C. J. Tagliabue Mfg. Co., Brooklyn, N. Y., manufacturer of indicating recording and controlling instruments,

LEAKS CAUSE LOSS

TRY THIS REMEDY FREE
KEY GRAPHITE PASTE

In spite of all precautions, joints will leak when you use ordinary methods. And leaks mean loss—in time, money, materials.

Take this easy way to learn of a preventive of joint leaks in all lines carrying High Pressure Steam, Oils, Acids, etc. Key Graphite Paste has convinced thousands. The largest refineries and plants of all kinds use it in preference to all else.

Try It At Our Expense

Key Graphite Paste can save you endless trouble and loss. That is why we want you to try it—that is why we make this free offer that so many have accepted. Send for your supply now. Then put it to the test in your own way, on your own equipment. Give it the hardest job you can find, and watch results!

This superior sealer is a greaseless, non-setting compound, requiring water only to thin it. It prevents rust and oxidation, preserving the metal. Its lubrication speeds the making up of threaded joints. And it holds 100% tight! Distillate or thinnest oils can't penetrate Key Graphite Paste. Even hot oil or constant vibration won't affect it. But, when you want the connection broken, Key Graphite Paste lets go.

Let the coupon below show you the way to end leaks. Where shall we send your supply?

KEY BOILER EQUIPMENT CO.
EAST ST. LOUIS, ILL.

Listed by the National Board of Fire Underwriters

N.P.N. 5-14-30

FREE TEST SUPPLY

KEY BOILER EQUIPMENT CO.
East St. Louis, Ill.

Send me a free test supply of Key Graphite Paste.

Company .....

Address .....

Requested by .....

AMERICAN PETROLEUM REFINING

by

H. S. Bell

HAVE you seen the new edition of AMERICAN PETROLEUM REFINING just out? Every detail of refinery practice is brought down-to-date in this one volume.

Among the outstanding recent developments, Dr. Bell goes thoroughly into vapor phase cracking, production of high compression gasoline, the development of modern pipe stills, use of Diesel engines in oil pumping, chemical cracking with aluminum chloride, new methods of treating lubricating oils and light oils, removing of amorphous waxes to allow manufacture of low cold test lubricants, distillation, fractionation, methods of testing, plant design, storage of oil, volume measurements, etc.

In AMERICAN PETROLEUM REFINING you have a complete analysis of refinery operation, engineering, plant management and equipment design of the modern oil refinery.

If you are a refinery superintendent, engineer, chemist, construction foreman or ambitious refinery employee—you will find this new volume by Dr. H. S. Bell, consulting engineer, of inestimable value in your work.

Get your copy of AMERICAN PETROLEUM REFINING today!

550 pages Illustrated $6 postpaid

NATIONAL PETROLEUM NEWS
Penton Bldg., Cleveland, Ohio

Send me the new edition of AMERICAN PETROLEUM REFINING by H. S. Bell. Enclosed is $6.

NAME .....

Street .....

City-State.....

has acquired property of the American Tobacco Co. on Park Ave., extending from Nostrand Ave. to Sanford St., Brooklyn.

The new building, into which the company moves in July, more than doubles the company's present facilities. The building has five stories and 300,000 square feet of working space. In addition to executive offices, manufacturing and laboratory departments, the building will have a completely equipped hospital and a cafeteria.

* * *

Link-Belt Co., Chicago, has moved its Baltimore, Md., offices to 913 Lexington Bldg., Baltimore. H. D. Alexander is in charge. Harry E. Reese handles sales of Link-Belt positive power transmission equipment, such as chain drives, herringbone gears and speed reducers.

* * *

General Electric Co., Schenectady, has on the market a new thermostat to control industrial heating units where very close control of the heat is not required, such as oil burner equipment. The device is available in three principal ratings. The current-carrying capacity is 15 amperes at 115 or 230 volt alternating current. The thermostat will operate with a differential of 5 per cent of the maximum temperature range.

* * *

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has placed W. S. Rugg, vice president in charge of engineering, in charge of sales, succeeding Edward D. Kilburn, vice president and general sales manager, resigned.

* * *

S. W. Kintner, director of the research laboratory, has been made assistant vice president, according to F. A. Merrick, president.

* * *

Cutler-Hammer, Inc., Milwaukee, on May 1 purchased the Union Electric Mfg. Co., Milwaukee, manufacturer of motor control specializing in drum type control apparatus. E. F. LeNoir president of the latter, becomes a member of the headquarters sales staff of the Cutler-Hammer company.

* * *

The Austin Co., Cleveland, are rebuilding the plant of the Franklin Oil & Gas Co., Bedford, O., which burned partially in March. Cost of rebuilding is about $50,000. A fireproof, reinforced concrete building of two stories will also be erected for the manufacture of grease and for a cooperage shop.

The Franklin company was organized in 1903 and reorganized in 1916 by G. W. Shaw, now president. H. H. Conaghan is treasurer and manager, and W. W. Shaw is lubricating engineer.

New Patents

Prepared by R. E. Burnham, patent and trade-mark attorney, 1343 H street, N. W., Washington, D. C., from whom copies may be obtained at the rate of 20c each. State number of patent and name of inventor when ordering.

April 15, 1930

MISCELLANEOUS

Process of treating fuel oils—Albert H. Ackerman, Chicago, Ill., assignor to Catalytic Chemical Co., Denver, Colo. Filed Dec. 14, 1925. No. 1,754,297.

Ladder for floating-roof tanks—Burdge O. Bushnell, Los Angeles, Cal., assignor to Union Oil Co. of California, same place. Filed Aug. 15, 1927. No. 1,754,384.

Gasoline-pump—Earl E. Eickmeyer, Dayton, Ohio, assignor to Dayton Pump & Mfg. Co., same place. Filed June 23, 1927. No. 1,754,504.

Liquid-measuring device provided with a continuous counter—Hermann Wydler, Bern, Switzerland. Filed Feb. 18, 1929. No. 1,754,589.

Oil-tank expansion-joint—Charles F. H. Bohnhardt, Lynwood, Cal., assignor to Julian A. Campbell, Long Beach, Cal. Filed Dec. 5, 1928. No. 1,754,597.

Visible pump—Leo Deutsch, Beaver, Pa., assignor to Wayne Pump Co., Baltimore, Md. Filed July 18, 1927. No. 1,754,615.

Method of chlorinating unsaturated hydrocarbons—Charles J. Strosacker, Midland, Mich., assignor to Dow Chemical Co., same place. Filed May 16, 1928. No. 1,754,656.

April 22, 1930

REFINING

Art of cracking hydrocarbons—Eugene C. Herthel, Chicago, Ill., assignor to Sinclair Refining Co., New York, N. Y. Filed June 30, 1925. No. 1,755,600.

Art of cracking hydrocarbons—Eugene C. Herthel, Chicago, Ill., assignor to Sinclair Refining Co., New York, N. Y. Filed June 27, 1927. No. 1,755,601.

Distillation apparatus—John A. Gibb, New York, N. Y., assignor to Zieley Process Corporation, same place. Filed Nov. 20, 1925. No. 1,755,778.

PRODUCTION

Casing-cutter—Walter L. Church, Houston, Tex. Filed Aug. 2, 1926. No. 1,755,206.

Upset-lock for chain belts—Edwin W. Goeser, Los Angeles, Cal., assignor to Emsco Derrick & Equipment Co., same place. Filed May 24, 1926. No. 1,755,252.

U-bolt construction—Edwin W. Goeser, Los Angeles, Cal., assignor to Emsco Derrick & Equipment Co., same place. Filed Dec. 27, 1927.

Built-up standing-column pump—Patrick H. Bray, Long Beach, Cal. Filed April 1, 1929. No. 1,755,421.

Well-boring apparatus—Monroe W. Carroll, Beaumont, Tex. Filed June 29, 1926. No. 1,755,424.

Oil-pump—Edward P. Reynolds, Anaheim, Cal. Filed Oct. 24, 1927. No. 1,755,516.

Deep-well pump—Herbert Paterson, Long Beach, Cal. Filed April 16, 1929. No. 1,755,661.

Combination make-up cathead and friction hoist—Walter W. Foster, Wichita Falls, Tex. Filed May 23, 1927. No. 1,755,728.

Sucker-rod guide and cleaner—John C. Armstrong, Fillmore, and Joseph E. Wallis, Los Angeles, Cal. Filed Jan. 9, 1929. No. 1,755,762.

Pump for oil wells—Roy G. Hawley, Bradford, Pa. Filed June 15, 1927. No. 1,755,990.

Bull-wheel-brake structure—Richard R. Bloss, Columbus, Ohio, assignor to International Derrick & Equipment Co., same place. Filed Jan. 3, 1928. No. 1,756,009.

MISCELLANEOUS

Production of valuable products from montan wax—Wilhelm Plungs, Ludwigshafen-on-the-Rhine, and Michael Jahrstorfer, Mannheim, Germany. Filed Sept. 10, 1927. No. 1,755,189.

Weight-equalizer for dispensing gasoline, oil, etc., from storage-drums—John W. Parr, Magna, Ariz. Filed May 18, 1927. No. 1,755,745.

Apparatus for delivering liquids in measured quantities by volume—George Wray, Southport, England. Filed July 1, 1926. No. 1,755,756.

Self Service

Newest Wrinkle in Indiana's Ruffled Market

Self service in gasoline at the Peoples Nugas Station at Cambridge City, Ind., the first of a projected chain of 20. The set-up is neat and clean with the black and white motif broken only by the evergreens

By Roger B. Stafford

N. P. N. STAFF WRITER

CAMBRIDGE CITY, Ind.

THE first of a chain of 20 self-serve filling stations in Indiana was opened in Cambridge City March 10 by the Peoples Nugas Self Serve, Inc., which is controlled by the Hoosier Petroleum Co. of Indianapolis and managed by Richmond, Ind., men.

This chain, like that of the Hoosier "Pete," will sell at cut prices and this first station is now selling 4.1 cents gallon below the service station market of its old line competitors and 5.4 cents below what is said to be the normal market for this agricultural community of about 2000 population.

The No. 1 station is on the south side of the National Highway, U. S. Route 40, in the eastern end of Cambridge City. Gasoline gallonage, it is said, runs from 1500 to 3000 gallons a day and the station's competitors say the figures undoubtedly are not exaggerated.

The station has made serious inroads on the gasoline and kerosene tank wagon business of its competitors but except for one station across the road its competition has not been felt much by other service stations in the town, which are owned by the Standard Oil Co. of Indiana, Shell Petroleum Corp., Mid-Continent Petroleum Corp., and Wade Oil Co., the last a Cities Service distributor.

No. 2 station is being constructed in Indianapolis, haven for low-price gasoline marketers, like a large part of Indiana, but locations of the other 18 could not be learned in Cambridge City.

Cost of the Cambridge City station was upwards of $15,000 without the real estate, which is leased. The station site has a frontage of approximately 150 feet and runs to a railroad siding perhaps 1000 feet in the rear.

The service part of the station has been surrounded by an 8-foot concrete block wall which has been stuccoed. The station building projects in an arc from the center of the wall at the rear of the service lot. Four visible dispensers with 10-gallon bowls are spotted in a line at equal distances between the station building and the sidewalk.

There is a wide concrete pavement extending from the station to the sidewalk so customers will not have to get off the pavement to go to the window of the station to pay for their gasoline and oil, or to walk around their cars. Cinders cover the remainder of the service yard.

Here is the path of gasoline from the time it arrives on the station's siding in the rear until it passes into the customer's car at the front:

The gasoline is unloaded by syphon into two 10,000-gallon storage tanks set horizontally on concrete cradles. Cradle has been laid for a third tank which will store high-test gasoline. The syphon is started with a hand operated rotary pump. About six hours is required to unload an 8000-gallon tank car.

Just back of the station building and concealed from the view by the station and the semi-circular wall is a small frame building for two direct-driven electric rotary pumps. These pumps are controlled from within the station by the girl cashier. One pump is used for regular gasoline and the second will be used for the high test. Gasoline lines are by-passed around the pump to prevent the building of pressure within the lines when outlet valves are closed.

The gasoline lines pass from the pumps through a concrete conduit to near the front of the station where they rise in two lines, one to the right and one to the left of the cashier, to meters with 10-inch dials like are used on most meter pumps today.

The line from the meter is divided into two branch lines, one branch leading to the bottom of the bowl of a pump in the service yard. There is a valve with lever control in each of these branches. A number above the lever corresponds with the number of a pump in the yard to which the line runs. These pump supply lines are in a concrete conduit. All supply lines are always filled with gasoline from the bulk storage tanks through to the base of the bowl in the dispensing unit.

A car is driven into the station and stopped beside a pump. The driver goes to the center of three

Fire Hazards of a Self Serve Station

THE Peoples Nugas self serve filling station at Cambridge City, Ind., has the advantage of low labor cost in selling and quick turnover because of the low prices. The system has some serious disadvantages, chief of which is the fire hazard that attends the promiscuous handling of a flammable liquid by the public.

No provision has been made at the station to safeguard or warn the public against the fire hazard. The only emergency fire protection is small hand extinguishers inside the station. There are no signs outside the station warning against smoking while gasoline is being discharged into the tanks of cars or into the drums that farmers bring in to fill.

A country youth on a Saturday night spree could create havoc while gassing his flivver and smoking at the same time.

There are no instructions about stopping the engine while fueling the car.

There is no requirement that the drums farmers use for gasoline shall be painted red.

In spite of these dangers, the state fire marshal's department, it is said, has approved the set up after recommending some minor changes in the electrical wiring.

It is doubtful that the pump installation would be approved by some states, but it evidently meets the Indiana requirements. In Ohio the pumps would not be approved by the state sealer's department because there are no indications that gasoline cannot be drained back into the storage tanks while gasoline is being delivered to a car. The station's manager says such drainage is impossible because of the checkvalves in the gasoline lines but such a remote check does not meet the requirements of some states.

Then there is the question of misbranding. The station's globes are inscribed "Aviation Gasoline" but the grade is said to be a 58-60 or 59-61 gravity with 90 initial boiling point, 50 per cent over at 288, and around 425 end point. This would indicate a gasoline better than U. S. Motor but of lower quality than domestic aviation grade.

Gasoline forms the great bulk of the business and a tremendous volume of sales is necessary to carry the station's overhead. Exact information about the overhead is not obtainable but some approximate figures would indicate that, at a 1.6 cent gross margin, the station would have to do close to 45,000 gallons a month to carry charges which are estimated conservatively.

The estimates are based on an $18,000 valuation for buildings, tankage, other equipment and grounds.

	Per Month
Salaries at station and share in central office management and accounting expense	$300
Rent on leased ground	75
Taxes	10
Interest on investment	90
Depreciation over 10 years	150
Electricity	40
Water	3
Leakage, shrinkage and evaporation, 0.50% on 50,000 gallons of gasoline	25
Total	$693

No estimate has been made for fire, tornado, liability, burglary or robbery insurance, which would add more than $25 a month to the expense. Assuming that coverage could be obtained for $25 a month, the total fixed expense would approximate $718 a month, to meet which would require sales of 44,800 gallons a month.

In this calculation oil and greasing sales have not been included so gross profit on them could be considered as net profit for the station.—Editor.

---

windows at the station building and pays for the volume of gasoline he desires. The cashier looks to see at which pump the car is, presses a button which starts the electric pump in the pump house behind the station. She then pulls down the lever whose number corresponds to the number of the pump where the customer's car is spotted. The dial registers the amount of the gasoline and she returns the lever to its vertical position when the dial registers the amount of gasoline purchased.

Meanwhile the customer has returned to the car and is supposed to note the volume that is in the bowl in which are indicators like in any visible pump. He unhooks the nozzle which is of the closed wet-hose type, puts it in the tank and allows the gasoline to run into the tank.

The customer is supposed to drain the hose but doesn't always do so and the next customer of that pump may get approximately two quarts the previous customer had paid for.

Instructions painted on the sides of each pump are:

"First—Pay cashier for gas and oil required.

"Second—See that amount of gas purchased is in bowl before removing hose.

"Third—Drain hose and put on gas cap."

A towel is hung on each pump so the customer may wipe his hands if they have been soiled in handling the hose and gas cap.

When the station was first opened make-up oil dispensing was a partly self service operation but now a young man puts the oil in the crank case because oil is more difficult to handle than gasoline.

Seven grades of oil are carried in drums in the basement. The oil is dispensed by 17 pounds air pressure direct to the drums, through meters which are installed on a channel iron frame in the station building back of the cashier's place.

The oil is drawn into measures and carried to the car by the young man attendant who also may aid women customers with their gasoline if they have any difficulty such as getting at the tank under the seat of a Model T Ford.

The young man also lubricates cars at an outdoor air lift to the left of the station building.

What has cut into the farm trade of the old line companies is the bulk sales to farmers who call at the station with drums. The station has special facilities for handling this business.

The same rotary pump that pumps gasoline to the four visible dispensers also pumps gasoline through a large meter into a line that runs back of the wall to the left of the station building. Attached to this line is a long 1½-inch wet hose which is thrown over the wall whenever a bulk customer is in the station.

The customer fills his drums and pays for the amount registered by the large meter, getting an invoice which he sends to the state auditor with his application for a refund of the tax of 4 cents a gallon. Sales of 400 or 500 gallons at a time are said to be not unusual and one sale of 800 gallons has been made, observers say.

Besides three grades of Pennsyl-

Check up!

The Color—Purity and Other Desirable Qualities of White Oak—Acid Treated—Steam Refined Stock

Specifications

Color	Light Olive Green
Gravity	20/22
Flash	500/510
Fire	580/600
Viscosity at 210F.	180/200
Pour Test	40/60
Conradson Carbon	4.2
Precipitation	0.1
Acidity	Nil

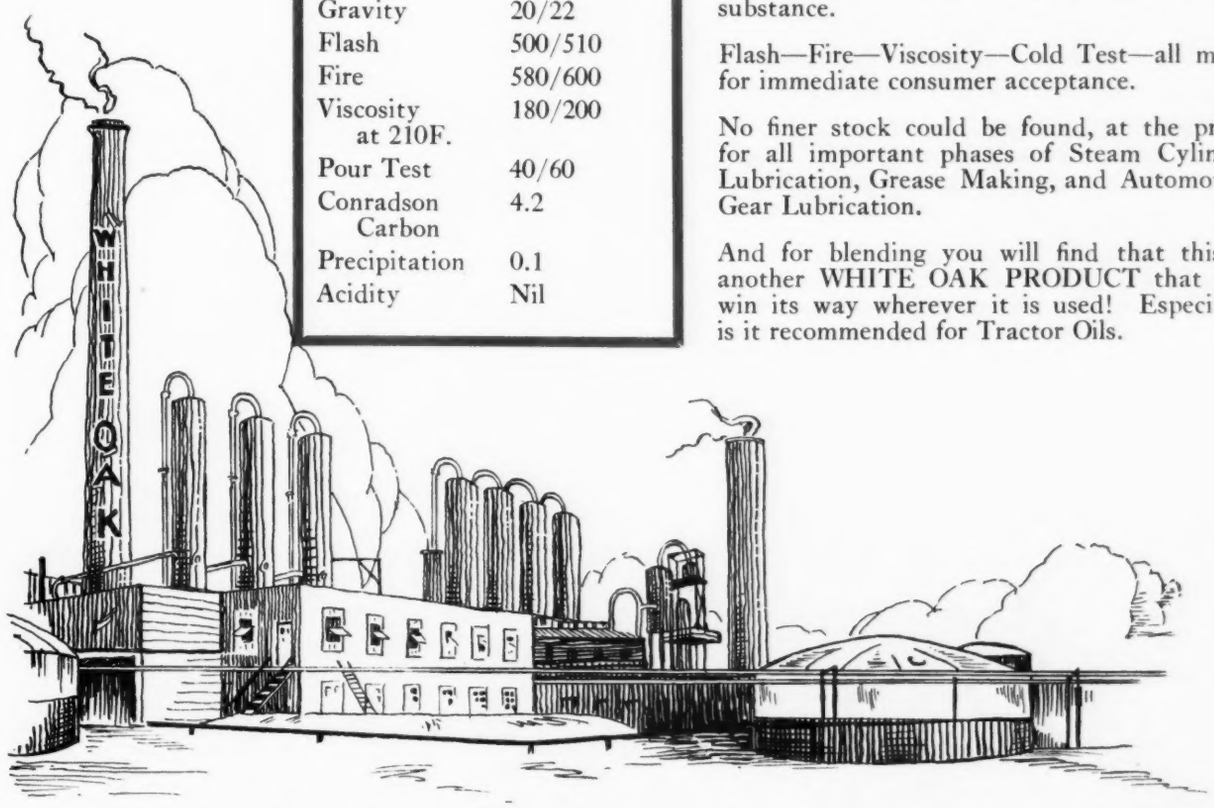
THE LIGHT OLIVE GREEN COLOR indicates at a glance its desirability for all purposes where a steam refined stock can be used.

Purity—no trace of acid, or other foreign substance.

Flash—Fire—Viscosity—Cold Test—all make for immediate consumer acceptance.

No finer stock could be found, at the price, for all important phases of Steam Cylinder Lubrication, Grease Making, and Automotive Gear Lubrication.

And for blending you will find that this is another WHITE OAK PRODUCT that will win its way wherever it is used! Especially is it recommended for Tractor Oils.



64/66-375 Gasoline
58/60 U. S. Motor
Anti-Knock Gasoline
38/40 Distillate
32/34 Gas Oil
All grades Fuel Oil
and Naphthas

WHITE OAK REFINING COMPANY
REFINERS AND MARKETERS
14th FLOOR HUNT BLDG.
TULSA OKLAHOMA
Subsidiary of
Gulf States Terminal & Transport Co., Inc.
Export Terminal—New Orleans, La.

WHITE OAK PETROLEUM PRODUCTS

Over the garden wall. A farmer filling his drum with low price gasoline. This stunt has cut deeply into the tank wagon business of the old line companies at Cambridge City in kerosene as well as gasoline because gasoline at this station costs 2.4 cents a gallon less than kerosene delivered down on the farm. At the right is the car lift with the draining funnel and high pressure lubricators

This young woman is the heart of the station. She makes change, presses a button, pulls a lever, and the gasoline flows into a bowl in a visible dispenser in the station yard. A few sweetmeats and car necessities are displayed in the windows to add a mite to the station's sales. In the right foreground is the meter through which bulk sale gasoline passes

The meter maker's dream. Ten are used to measure oils, kerosene, naphtha and alcohol. This is a neat layout, although the camera did emphasize the roughness of the paint. Beneath the drain shelf is space for larger measures, those on the shelf being quarts

vania oils and four grades of Texas oils there are metered outlets in the station for kerosene, cleaning naphtha, and alcohol. The station has no bulk tankage for any of these commodities but dispenses them from drums. It buys the kerosene and naphtha from local competitors at the tank wagon price and does not cut the price. The tank wagon price of kerosene is 13.3 cents a gallon or 2.4 cents a gallon more than the retail price of gasoline at the station without the state tax.

The company buys its gasoline from brokers and has been paying 9.3 cents a gallon delivered on tracks in the rear of the station. Its retail price is 10.9 cents a gallon without tax, or 14.9 cents with tax. The normal station price of gasoline is 20.3 cents in Cambridge City but the present old line company price is 19 cents.

The station has a gross operating margin of 1.6 cents a gallon but its handling costs are low. There are four employes, a manager, two girl cashiers and the young man attendant. Their combined salaries are said to be only about $50 a week.

The station is open from 6 a. m. to 9 p. m. five days a week and until 10 p. m. Saturdays and Sundays. One young woman comes on at 6 a. m. and works until noon. Then the other girl takes up the job and remains until closing time. This second girl opens the station the following morning and works until noon. Thus one girl is on the job and the other off over a 24-hour period. Either the manager or the man attendant are also present over the business day.

The oils are also sold at low prices, the light being 18 cents a quart, the medium 23 cents and the heavy 25 cents.

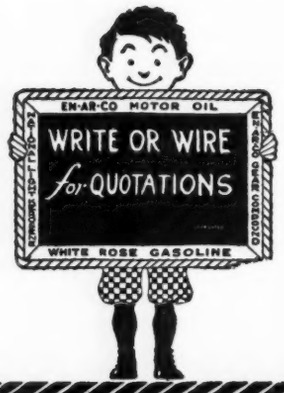
The station's mechanical equipment at present consists of two 10,000-gallon storage pumps, a hand rotary pump to create the unloading syphon, two direct driven rotary pumps with motors, two air compressors—one for the lift and greasing facilities and one for the oil, kerosene, naphtha and alcohol dispensing outlets—10 meters for oil, kerosene, naphtha and alcohol, one large meter for the bulk gasoline dispensers, two meters for the four gasoline pumps, an air operated lift, air operated high pressure greasing equipment with guns and spray, four special visible dispensers, two air towers, and the auxiliary piping, valves, hose and hydrant.

Waste crankcase oil is drained into a funnel which swings on swivels under the lift, and then into an underground receptacle behind the wall.

Black and white is the color scheme. The stucco is white with black band trim. The pumps are painted black and white. The girls wear white smocks with black collars, cuffs and pocket band. The man attendant wears white duck trousers and jacket with black band, and white cap.

The station lot is lighted at night with five lantern-type floodlamps. The station is heated with electricity. Evergreens are set in black and white boxes at regular intervals around the wall.

Mr. Jenkins, president of the Jenkins Vulcan Spring Co., Richmond, is president of the Peoples Nugas Self Serve, Inc., and Arthur Ellis, general manager of the spring company, is general manager. Howard W. Roberts is local manager at Cambridge City.



En-ar-co
MOTOR OIL
White Rose
GASOLINE

YOU will make money if you handle these nationally advertised brands.

All grades of lubricating oils and greases.

The National Refining Co.
Cleveland, Ohio

Heavy Duty Folio

367—The best constructed folio we have developed. Made from the best 6-oz. smooth black cowhide. Comfortable handles made to carry all the weight, relieving the strain on the seams. Reinforced bottom protected with studs. Three pockets. Two inner cases may be carried.

Less 10% for Cash
Other styles in our FREE Catalog

L-U-C-E
Builders of Sales Luggage
614 Delaware, KANSAS CITY, MO.

ON THE LAZY BENCH

National Petroleum News

And What Would Father Have?

Teacher: "If your father earned $40 a week and gave your mother half, what would she have?"

Bright Pupil: "Heart failure."

—The Gas Line

* * *

Stranger: "I represent a society for the suppression of profanity. I want to take profanity out of your life—"

Johnny: "Hey, mother, here's a man who wants to buy our car."

—The Texaco Mission

* * *

Plenty

'Arry: "Heard of the latest in poisons?"

Plane: "No, what is it?"

'Arry: "Airplane poisoning. One drop is usually sufficient."

—Mid-Continent Petroleum Courier

* * *

A man went to have his photograph taken. "Mounted or otherwise?" asked the photographer.

"Well, I guess I'll have it taken mounted," replied the man, "but I don't know what my wife'll say. She's never seen me on a horse before."

—The Gas Line

* * *

"After Deacon Brown's daughter got married, there was a sudden increase in the population of the town."

"How was that?"

"Ten of the boys came back home!"

—Fusion Facts

* * *

"Hey, Rastus! Lemme present my wife to yuh."

"Naw, suh! Boy! I's got one of mah own!"

—The Loreco Diamond

* * *

Visitor: "What's your name, my good man?"

Jailbird: "875."

Visitor: "But, that's not your real name."

Jailbird: "Naw, that's me pen name."

—The Gas Line

* * *

Wouldn't Tell

An old lady was walking by the creek and came upon several boys bathing in their birthday suits.

"Boys," she exclaimed, "is it not against the law to go bathing without a bathing suit?"

"Yessum," they replied, "but come on in; we won't tell on you."

—Mid-Continent Petroleum Courier

Of Course

"Do you believe in heredity?"

"Absolutely; that's how I got all my money."

—The Gas Line

* * *

Mother: Why don't you wear that beautiful underwear you got for Christmas?

Daughter: Oh, I'm saving that for a windy day.

—Barnsdall

* * *

Service Station Attendant: "Shall I check your oil?"

Patron: "No, I'll take it with me."

—The Loreco Diamond

* * *

Mary: "Bill made a forward pass this afternoon."

Ruth: "I told you that you'd have to watch those college boys, dearie."

—The Gas Line

* * *

Our Annual Christmas Story

It was the night before Christmas. Rastus was a lone bachelor and he had just invested in a present for himself, and was starting for home. By a mighty effort he swung onto the platform of a moving street car, and as he did so a quart bottle of "corn" fell out of his pocket and broke on the street below. "Dere goes Christmas," said he as the tears trickled slowly down his cheeks.

* * *

Mary had a little skirt,
So neat, so light, so airy,
It never showed a speck of dirt
But it certainly did show Mary!

—Mid-Continent Petroleum Courier

* * *

"Her silhouette is so distinctive."

"I don't know; I never rode in it."

—The Gas Line

* * *

"What's a cowslip?"

"Just a bovine indiscretion, Babe; just a bovine indiscretion.

—Fusion Facts

* * *

A Late Book

Makin' Hoopee—By American Wood Barrel Co.

—En-ar-co National News

* * *

"It's a pretty rich farming country out your way, isn't it?"

"Yes, you never saw so many filling stations to the acre!"

—Field Flashes

New Equipment

A. Y. McDonald Mfg. Co., Dubuque, Ia., is circularizing the oil marketing trade with circulars on its underground tank equipment, truck tank equipment and other devices for oil marketers.

The equipment for underground tanks include vented and water-tight lock fill caps, flange unions, foot valves, bushings, fill boxes, plunger hand pumps, pipe joint compound and wrenches.

The new McDonald truck tank cap and vent has been designed to decrease the weight of truck tank accessories, the company says. It also describes its triplex truck tank vent, faucets, truck tank hose and couplings, tank caps, pumps and unloading nozzles.

A third bulletin describes and illustrates many other devices for the oil bulk and service station, including barrel fillers, funnels, measures, radiator fill cans, pumping outfits and valves.

* * *

Milwaukee Tank Works Inc., Milwaukee, Wis., has developed a new visible gasoline pump which it calls the Milwaukee 10-10, meaning ten strokes—ten gallons, or one gallon lifted per stroke of the operator's arm. The company claims this to be the first pump to lift one gallon to the stroke. The day hose hook-up built into the removable two piece hexagon housing, guards the nozzle from dirt and water. The night hook-up automatically operates the drain valve and at the same time locks nozzle and pump handle, all with one operation.

The pump is of single cylinder, double acting type with a brass lined cylinder, aluminum piston and cast iron ring.

* * *

Viking Pump Co. of Delaware, Cedar Falls, Ia., has placed on the market a Simplex gauge that automatically reads the contents of a tank, quickly and accurately. It has been tested under severe conditions and its accuracy is insured through a special float of sufficient size to actuate the operation of the gauge proper.

The gauge has no gears and no complicated mechanism. The tank does not have to be emptied and only a few plumber's tools are required to install it.

The tap, wire, counterweight and float are made either of non-corrosive material or are specially treated to make them non-corrosive.

* * *

The Autocar Co., Ardmore, Pa., has appointed W. H. Moore manager of its national accounts' division, with headquarters in New York City. Mr. Moore has been for many years with the White Motor Car Co. and with General Motors Corp.

GOOD LUBRICATION

Brings Lower Costs

One of the best ways to lower production costs is through proper lubrication of machine bearings. The moving parts run lighter, less power is required to drive them, and they last longer.

Watch lubrication particularly when starting and stopping. Then the fluid film of any lubricant is broken. Unless you are using a good oil, wear and tear soon take their toll.

Humble Oils have the valuable quality of leaving a semi-plastic, adsorbed, protective film on the surface of the metal after the fluid film is broken. You get enough lubrication to hold friction down until the film is re-established by rotation of the bearing. Once the parts are moving, Humble Oils retain the proper viscosity to lubricate efficiently at the temperatures produced by high speeds and peak loads.

There is a Humble Oil which is specially prepared to meet the needs of your line shafts, countershafts, machine tools, car or truck. Use this oil regularly. It's cheaper than buying new parts.

HUMBLE OIL & REFINING CO. HUMBLE OILS HOUSTON, TEXAS

HUMBLE OIL & REFINING CO.

"Service Insurance For Your Car."

GRANBERG METER CORPORATION

Announces Appointment of

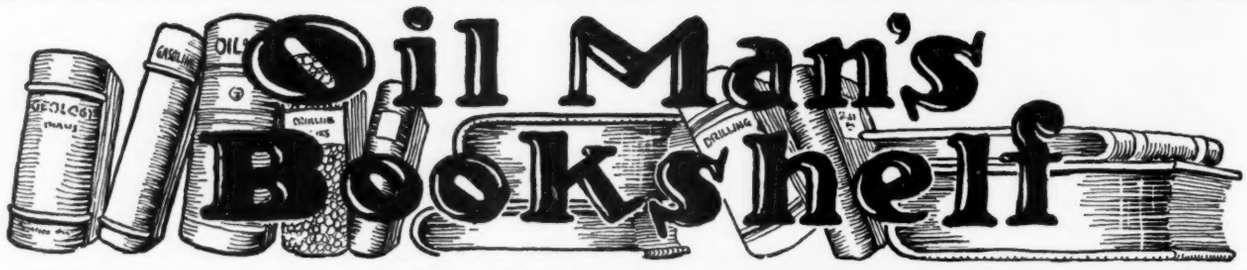
AQUA SYSTEMS INC.

2 LAFAYETTE ST., NEW YORK CITY

as Distributors of Granberg Meters and Accessories in the New York Metropolitan District.

Engineering Assistance and Repair Service Are Available.
Ample Stock is Carried in New York Warehouse.

GRANBERG METER CORPORATION
79 New Montgomery St.
SAN FRANCISCO, CALIF.



Where you and industry are identical—

Every successful business is constantly on the lookout to improve its machinery and methods.

You, as an individual, in order to progress must devote a reasonable part of your time to ***improving your mind.***

Good books on various phases of the oil industry will improve your mind, and pay you big dividends.

OIL PRICE HANDBOOKS

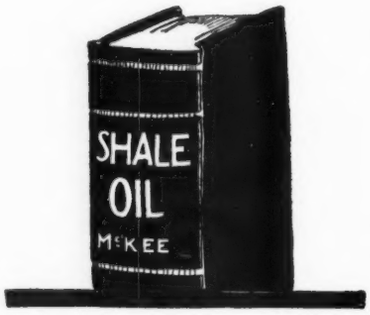
Have you a complete record of REFINERY prices;. TANK WAGON markets; EXPORT prices; CRUDE prices—

For quick reference and comparison with today's prices?

The OIL PRICE HANDBOOK is the only complete record of oil markets for a whole year, compiled in one handy volume for quick reference. Cloth bound—marginal index—9″ x 6″—146 pages.

Oil Price Handbook for 1929 .....$7.50
Oil Price Handbook for 1928 .....$5
Oil Price Handbook for 1927 .....$5
Oil Price Handbook for 1926 .....$5
Oil Price Handbook for 1925 }
Oil Price Handbook for 1924 } $6

Send for these OIL PRICE HANDBOOKS *now*, before they are all gone.



If you are interested in the great problem of supplying the world with fuel—get a copy of SHALE OIL.

It is written by men who have devoted years to the investigation of oil shale resources and their uses. R. H. McKee, professor of chemical engineering, Columbia Univ., is chief editor, and other oil shale specialists have contributed chapters as follows:

Origin of Oil Shales—Geology and distribution—Kerogen, the oil yielding material—Fundamental factors in analyzing and evaluating—Refining of shale oils—Nitrogen constituents—Basic factors of industry—Distillation plants—Patents. 325 pages—profusely illustrated, $6.

OIL and GAS FORMS

by Benoit

Cyclopedia of Oil and Gas Forms by R. L. Benoit, of the Louisiana Bar, contains all forms used from the original acquisition of leasehold estates for exploration and development to the retail marketing of the refined product.

They are the latest forms which have been drafted to fulfill interpretations and definitions of courts of last resort, including:

Leases; Assignments; Special and General leases and assignment stipulations; Corrections; Amendments; Ratifications; Extensions; Rentals; Releases; Mineral and Royalty sales and contracts; Rights of Way; Escrow agreements and options; Oil and gas and lease purchase and sales contracts; Bonds, Mortgages; Surface contracts; Mineral reservations; Title; Office; Injury and compensation forms; Powers of attorney; Transfer and division orders; Well drilling contracts; and other forms.

CYCLOPEDIA of OIL and GAS FORMS is valuable in both office and field work in all oil producing states.

634 pages Price $10.

Cut out and mail

NATIONAL PETROLEUM NEWS
Room 707, 1213 West 3rd St., Cleveland, Ohio.

I want the books checked below. Enclosed is check or money order for $.....
(Add 15 cents for foreign postage)

- ☐ *Oil Price Handbook*
- ☐ *Shale Oil—$6*
- ☐ *Oil and Gas Forms—$10*

NAME .....

Address .....

.....

.....

They Meet Your Car and Park It While You Enjoy the Show

SAGINAW, Mich.

CALLING for and delivering automobiles at evening events in the city auditorium built business last winter for the indoor parking department at the one-stop service station of the Saginaw Oil Co. The auditorium is two blocks from the station, and a crew of uniformed drivers received and delivered the cars.

In addition to the usual indoor parking fee the station obtained considerable lubrication and car washing business while these autos were in storage. The biggest evening netted 63 cars to storage. During the summer months the service will be discontinued.

George J. and John G. Schindehette, partners in the Saginaw Oil Co., considered for a long time as to how the one-stop station would fit into the marketing outlets of an oil jobber. Saginaw has four tire company one-stop stations.

The station is on the fringe of the retail business district, in a one-story building of concrete block. It is 75 by 120 feet, without any central roof supports. Adjoining the station site are several vacant lots for outdoor parking. From the street the building looks like the usual garage as all services are offered under the roof. Grover G. Stine, former tire station operator in Saginaw, manages the station.

As the station has been operated only a comparatively short time all of its merchandising plans are not in order yet. Mr. Stine has worked up a mailing list and is sending out letters asking his friends to drop in at the station. The telephone is being used now for solicitation also. Each week an advertisement is inserted in the local newspaper.

While in the tire station Mr. Stine worked up an elaborate follow-up system. He plans to arrange a similar system for the new station. Under the system planned the follow-up card will be mailed in about 18 days. If there are no results then the customer will be called on the telephone.

Names and addresses of customers for the follow-up system will be obtained from the work ticket. At present the station punches out the work ticket on the cash register when the customer enters the station.

An identification stub is given the customer, showing the transaction number, date, and the name and address of the station. The work ticket has space for the customer's name and address on the front, but this is not being filled in yet.

On the back of the work ticket is a list of services, with space for notations. These services are storage, gasoline, oil, car washing, polishing, lubrication, differential, transmission, springs, wheels, frozen fittings, battery, battery repair, battery rental, tires, tire repairs, service, and driver service.

The station has facilities for indoor and outdoor parking, complete servicing of the mechanical parts of the car, removing fender trunks, radiator cleaning, and brake service. The station sells several makes of tires, and does repairing. Batteries are sold, repaired, and charged.

Mr. Stine believes such a station could spend 7 per cent of its gross sales on advertising. In this item he includes newspaper space, follow-up cards and direct mail pieces, and novelties, such as pencils, book matches and so forth.

The car washing department, usually a burden with many one-stop stations, is a paying proposition. Two colored men work full time to wash cars on a commission basis. When work is rushing they get their own extra help, and pay them out of their commission. The station provides water, the floor space, and gasoline; the operators supply the other materials, but buy them from the station. Each week Mr. Stine settles with the wash rack crew. If they have kept the offices clean they receive a bonus.

Oil Well To Jobber Book Out

ELDORADO, Kan., May 8.—The booklet "From the Oil Well to the Jobber" compiled by the Eldorado Refining Co. here, is now out.

As told in the March 5 issue of NATIONAL PETROLEUM NEWS, page 111, it tells in non-technical language of the various processes through which crude oil passes until it reaches the jobber in various forms of finished products. The material and illustrations used are taken from a series of advertisements the company has been running in NATIONAL PETROLEUM NEWS

The booklets may be had for 10 cents each to cover postage.

Wisconsin Code Signers Get Certificates

MILWAUKEE, May 3.—Wisconsin marketers signing the code of ethics receive an engraved certificate suitable for framing and hanging over the desk. Certificates indicate that the owner has signed the code, and are issued by the state code committee of Wisconsin.

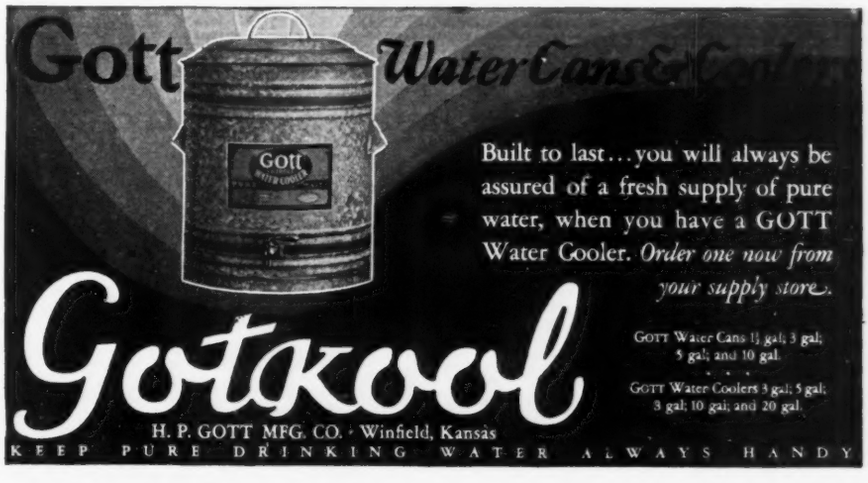
CHICAGO.—C. D. McCormick formerly with the Illinois Glass Co., Alton, Ill., is now advertising manager of the C. F. Pease Co. manufacturer of blue printing machinery, drafting room equipment, etc.

Decides Lease Agreement Not for Curb Pumps

MILWAUKEE—Lease and license should not be extended to curb pump operators, members of the Wisconsin Marketing Code committee decided unanimously at a meeting recently in Milwaukee. Only drive-in accounts should be solicited and leased, the committee decided.

A bona-fide, drive-in account was defined as "a place of business engaged in the selling of petroleum products and situated on privately owned property. All gasoline and, or, oil dispensing equipment as well as ample space for servicing motor vehicles must be situated entirely on said privately owned property."

The committee made the ruling effective April 21. Existing curb pump lease and license agreements are to terminate at the end of the agreement.


Gott
Water Cans & Coolers
Built to last... you will always be assured of a fresh supply of pure water, when you have a GOTT Water Cooler. Order one now from your supply store.
Gotkool
GOTT Water Cans 1½ gal; 3 gal; 5 gal; and 10 gal.
GOTT Water Coolers 3 gal; 5 gal; 8 gal; 10 gal; and 20 gal.
H. P. GOTT MFG. CO. • Winfield, Kansas
KEEP PURE DRINKING WATER ALWAYS HANDY

Advertising Manager Wanted

We want a man with experience in the preparation of advertising layout and copy, a thorough grasp of sales promotion, and a fundamental working knowledge of petroleum marketing. Substantial starting salary and brilliant future for the man who can qualify. Give full details in first letter. Replies strictly confidential.

Address Box 516, National Petroleum News

Twelve Points of Service At Pierce Stations

ST. LOUIS—Twelve points of service for stations of the Pierce Petroleum Co. were listed in an article published in the March issue of the Pierce Pennant, the company's house organ. These points, as listed below, are for a two-man station, showing the duties of each attendant, but they are to be performed at one-man stations also.

1.—Meet customer on the drive.
Both men shall be at the pump before the car stops.
Greet the customer.
Remove gasoline cap.
Hold gasoline cap in hand.

2.—Solicit capacity of gasoline tank. (Man No. 1.)
Gauge the tank, by using stick or gauge.
"Your tank will hold — gallons. May I fill it up with Pennant Gasoline?"

3.—Call customer's attention to full delivery. (Man No. 1.)
Call customer's attention to each draining of bowl. Example: "That is five gallons, ten gallons, twelve gallons." Drain hose. Replace gasoline cap.

4.—Check oil supply. (Man No. 2.)
Walk to hood of car and say: "I will check your oil." Tell customer quantity needed (know the Pennant oil chart).

5.—Crank case solicitation. (Man No. 2.)
"When was your oil last changed?" If 500 miles or more: "It will take only three minutes to drain. Ask customer to pull to pit or rack. Solicit flushing oil.

6.—Transmission, differential and chassis greasing solicitation. (Man No. 2.)
Ask customer when the transmission and the differential cases of his car were drained, flushed and refilled last. Tell customer this work should be done at least twice a year.

7.—Five-gallon Pour-Ezee drum solicitation. (Man No. 2.)
Explain saving and service.

8.—Radiator service. (Man No. 2.)
Keep radiator buckets full. Man No. 2 will go to radiator with full bucket of water in hand and see if water is needed. Wipe up water which spills on car. Replace radiator cap.

9.—Air service. (Man No. 1.)
Inspect tires of customer's car. If no other customer is on the driveway give air service to each car.

10.—Windshield service. (Man No. 1.)
If windshield is wet, muddy or dusty, wipe it. Don't scratch the car.

11.—Handle money efficiently. (Man No. 1.)
If customer offers bill (A) call at-

Only 10" Wide — but it holds 30 gallons!

You Can Store 180 Gallons of OIL in a SPACE Only 5 Feet WIDE!

"Look at this, Jack! This little Tokheim Motor-Oil tank measures only 10⅛ inches wide!"

"Sure, Tom! In other words, it isn't as *wide* as your foot is *long*!"

"But not joking, old man—this compact little tank holds 30 gallons of oil. Imagine that!"

"Why that's 3 grades of oil every 2½ feet! If filling station space costs money these Tokheim Motor-Oil tanks will save us some real cash in space alone!"

Cut 463
30-GAL. COMPACT MOTOR-OIL UNIT
Equipped with Automatic Spring Return Drip Tube and Quart Pump.
Specify Cut 433 for Anti-Drip Nozzle.

Compact units, high-quality construction, and attractive prices—if those are some of the things you demand in Motor-Oil storage and dispensing equipment write today for the new Tokheim booklet which pictures the 18 models and tells a story that will hold your interest.

Cut 470
2-COMPARTMENT WHEEL TANK
Each Compartment 25 Gallons
Equipped with Quart Pumps and Automatic Spring Return Drip Tubes.
Specify Cut 460 for Anti-Drip Nozzles.

TOKHEIM OIL TANK & PUMP CO.
FORT WAYNE, INDIANA

Over 700 Jobbers *Say "Yes" To This!*

DOES it pay to market your own brand of motor oil, providing you can get a super-quality — one made from 100% Pennsylvania crude—at a price that makes substantial profits certain?

More than 700 oil jobbers who buy from this 50 year old refinery organization would answer "Yes." *And they ought to know.*

We'll make up any grade of "Pennsylvania" motor oil (Sharples Process) to your own specifications. Or if you prefer, we'll recommend one of our own tried and tested specifications that will exactly suit your needs.

Whether your order calls for tank cars, compartment tank cars, barrels or drums, you are assured of prompt and efficient service. Your request for details and quotations will receive immediate attention.

Guaranteed 100% PURE PENNSYLVANIA OIL

Permit No. 31

THE FREEDOM OIL WORKS CO.
FREEDOM, PA.
Refineries at FREEDOM and CORAOPOLIS, PA.

Also available for immediate shipment

85/90 Viscosity Bright Stock
100% Pennsylvania Neutrals
600 Steam Refined
650 Steam Refined
600 Flash Steam Refined
Freedom Filtered Kerosene Oil

FREEDOM

100% PENNSYLVANIA OILS

FO-503

tention to denomination of bill, (B) count change into his hand, starting with amount of purchase and counting up to the denomination of bill.

(Man No. 1 shall collect the money and Man No. 2 shall tell Man No. 1 the amount of the oil bill.)

12.—Thanking customer. (Man No. 1.) "Thank you. Please come in again."

New Stations Building

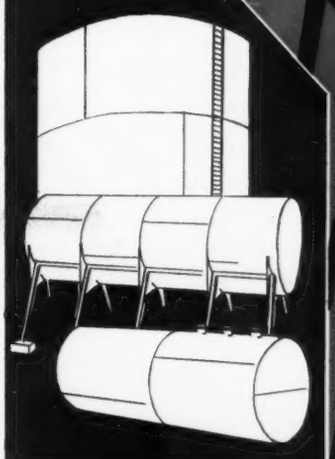
Note: Material used in this column is principally taken from the newspapers. NATIONAL PETROLEUM NEWS assumes no responsibility for its accuracy.

The list as published from week to week cannot be looked upon as indicative of the relative extent to which stations are being built in various parts of the country.

Seneca, Mo.—The Tydol Oil Co., filling station.
Blooming Prairie, Minn.—E. B. Keenan, filling station.
Paris, Tex.—Magnolia Petroleum Co., service station.
Fort Dodge, Ia.—Shell Petroleum Corp., service station.
Gove City, Kans.—Ferd Francoeur, filling station.
Cottonwood Falls, Kans.—Fred Faris, filling station.
Pittsburg, Kans.—F. H. Miller, filling station.
Perry, Ia.—Shell Petroleum Corp., filling station.
Little Falls, Minn.—Cities Service Oil Co., filling station.
Norway, Ia.—Eldred Thomas, filling station.
Mt. Pleasant, Ia.—John Linch, service station.
Sac City, Ia.—Standard Oil Co., service station.
Dubuque, Ia.—Mid-Continent Petroleum Corp., service station.
Odebolt, Ia.—Farmers' Union, service station.
Britt, Ia.—Gene McGurk, service station.
New York, N. Y.—Sobel Bros. Inc., service station.
Hornell, N. Y.—Standard Oil Co., filling station.
Carthage, N. Y.—H. N. Davison, service station.
Oneida, N. Y.—Standard Oil Co., filling station.
Charlotte, N. C.—Arthur Medlin, service station.
Jacksonville, Fla.—Shell Petroleum Corp., filling station.
Charlotte, N. C.—W. M. Tafts, Jr., service station.
Augusta, Ga.—J. J. Rourke, filling station.
Hudson, N. Y.—Gould Scott Ford Agency, service station.
Nassau, N. Y.—Charles Botsch, filling station.
Nassau, N. Y.—Nassau County Mortgage Co., service station.
Binghamton, N. Y.—Deyo Oil Co., service station.
Binghamton, N. Y.—Standard Oil Co., service station.
Scranton, Pa.—Sun Oil Co., filling station.
Faribault, Minn.—National Refining Co., filling station.
Faribault, Minn.—Shell Petroleum Corp., filling station.
Emmetsburg, Ia.—Shell Petroleum Corp., service station.
Anthon, Ia.—Standard Oil Co., service station.
Storm Lake, Ia.—Shell Petroleum Corp., service station.
Tipton, Ia.—Farmers' Union filling station.
Northfield, Minn.—National Refining Co., filling station.
Faribault, Minn.—White Eagle Oil & Refining Co., filling station.
Mankato, Minn.—Northern States Coal Co., bulk and filling stations.
Estherville, Ia.—Shell Petroleum Corp., filling station.
Trenton, Neb.—Kugler Oil Co., filling station.
St. James, Mo.—W. J. Delano, filling station.
Bunceton, Mo.—George Huecker, filling station.
Davenport, Ia.—Dr. W. A. Sebolt, filling station.
Wykoff, Minn.—Karl B. A. Keifer, filling station.
Minneapolis, Minn.—Clyde George, filling station.
Lake City, Minn.—Cities Service Oil Co., filling station.
Trenton, N. J.—F. R. Brace, service station.
Davenport, Ia.—The Texas Co., filling station.

Windom, Minn.—Cities Service Oil Co., filling station.
Boone, Ia.—Cities Service Oil Co., filling station.
Hamburg, Ia.—Standard Oil Co., filling station.
New Hampton, Ia.—Shell Petroleum Corp., service station.
Montour, Ia.—C. E. Webb & E. R. Davis, filling station.
De Smet, S. D.—White Eagle Oil & Refining Co., filling station.
Diedmont, Mo.—Shell Petroleum Corp., filling station.
Ottawa, Kan.—Farmers' Union Oil Co., bulk station.
Nebraska City, Neb.—Skelly Oil Co., filling station.
Trenton, Neb.—Kugler Oil Co., filling station.
Raywood, Tex.—H. L. Swinney, filling station.
Denver, Colo.—G. R. Weir, filling station.
Baldwin City, Kan.—Fred Hindman, service station.
Coffeyville, Okla. — Mid-Continent Petroleum Corp., filling station.
Laramie, Wyo.—Midwest Refining Co., service station.
Wellington, O.—J. W. Greenfield, filling station.
Lima, O.—Firestone Tire & Rubber Co., service station.
St. Joseph, Mo.—Skelly Oil Co., filling station.
Ft. Smith, Ark.—Gulf Refining Co., filling station.
Beaumont, Tex.—Magnolia Petroleum Co., filling station.
Mount Pleasant, Ia.—F. Arnold & Rugg, filling station.
Mankato, Minn.—Northern States Oil Co., service station.
Independence, Kan.—Standard Oil Co., filling station.
Charlotte, N. C.—T. S. McPheeters, service station.
Bluefield, Va.—Gulf Refining Co., distributing plant.
Sidney, Neb.—Standard Oil Co., filling station.
Glendive, Mont.—Montana Motor Co., service station.
Moorhead, Minn.—White Eagle Oil & Refining Co., filling station.
Minneapolis, Minn.—C. W. Brown, filling station.
Minneapolis, Minn.—C. A. Caley, filling station.
Minot, N. D.—White Eagle Oil & Refining Co., bulk plant.
Redfield, S. D.—Colonial Oil Co., filling station.
Columbus, O.—Pure Oil Co., filling station.
Columbus, O.—Standard Oil Co., service station.
Columbus, O.—Refiners Oil Co., filling station.
Urbana, O.—Shell Petroleum Corp., service station.
Cleveland, O.—Allied Oil Transport Co., oil plant.
Columbus, O.—Standard Oil Co., filling station.
Gallipolis, O.—Shell Petroleum Corp., filling station.
Cleveland, O.—Cities Service Oil Co., service station.
Conway, Ark.—Magnolia Petroleum Co., filling station.
Moberly, Mo.—Proctor Oil Co., filling station.
Reinbeck, Ia.—Andrew Schmidt, filling station.
Minneapolis, Minn.—Blau Oils, Inc., service station.
Northfield, Minn.—National Refining Co., filling station.
Arkansas City, Kan.—E. A. Bigley, filling station.
Cuero, Tex.—Gulf Refining Co., filling station.
Iowa City, Ia.—Skelly Oil Co., service station.
Spring Valley, Minn.—Pure Oil Co., service station.
Rock Rapids, Ia.—Shell Petroleum Corp., bulk station.
Uvalde, Tex.—Gulf Refining Co., filling station.
Uvalde, Tex.—Humble Oil & Refining Co., filling station.
Wheeling, W. Va.—Standard Oil Co., filling station.
Sioux City, Ia.—F. S. Holloway, filling station.
Corpus Christi, Tex.—J. N. Boleman, filling station.
Mason City, Ia.—L. H. Woodward, filling station.
Eldon, Ia.—Shell Petroleum Corp., service station.
Eagle Grove, Ia.—Shell Petroleum Corp., service station.
Emmetsburg, Ia.—C. E. Johnson, filling station.
Beatrice, Neb.—The Texas Co., filling station.
Blue Earth, Minn.—Sinclair Refining Co., filling station.
Hot Springs, S. D.—Standard Oil Co., filling station.
Duquesne, Pa.—Tidewater Oil Co., filling station.

TANKS



Delivery

Speed in delivery of tanks for your oil and gas storage may be important. If so Birtank's stock of standard sizes and large production facilities insure quicker shipments. Birtank's central location plus direct railroad routes in all directions reduces time in transit to a minimum.

And in addition, when you buy Birtanks, you are buying tanks picked by the majority of tank users, as the best tanks made.

Let us quote.

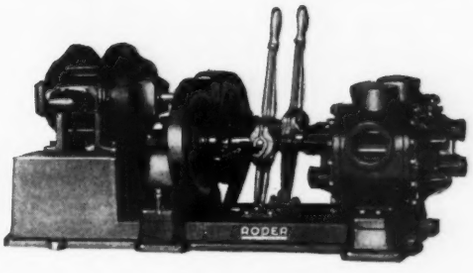
BIRMINGHAM TANK COMPANY

Executive offices—Plants

Birmingham, Ala.

New York, New Orleans, Tampa, Atlanta, Jackson, Miss.

TOUGH



enough for every job

Thick oil or thin—winter or summer—it's all the same to ROPER Gasoline and Oil Pumps. Designed on a simple, efficient rotary gear principle—they handle oil of any viscosity with efficiency achieved by no other pumps on this service. They're built tough, strong and heavy to give better and longer service than you are accustomed to.

Write for Catalog No. 58 which fully describes all ROPER Bulk Station, Refinery and General Service Pumps. No obligation.

We manufacture a complete line of hand and power pumps for petroleum products.

ROPER

GASOLINE & OIL PUMPS

GEO. D. ROPER CORP., Rockford, Ill.

IMPORTANT

for

The Globe Auto Hoist Does Not Infringe on any Valid Patent.

Other manufacturers undoubtedly have licensed rights to their designs and we have licensed rights to our design. The operating principle of Globe Auto Hoist is one that we have used in manufacturing elevating equipment since 1918 under U. S. and Canadian Patents.

We guarantee all past and future distributors and purchasers of Globe and Trapp Grain Elevator Lifts and Globe Auto Hoists against any and all losses from patent infringement suits.

ADVERTISING PAGES REMOVED

Along the Air Lanes

AN AGGRESSIVE aviation selling campaign has been mapped out for this year by the Vacuum Oil Co., New York. It purchased three planes to be used solely for selling aircraft engine lubrication.

One is a Curtiss Robin, a semi-cantilever type cabin monoplane, powered by a Curtiss Challenger engine of 165 h.p., capable of a speed of 100 to 110 m.p.h. This plane will be used in southwestern territory.

Another is a Fairchild K R 34, equipped with a five-cylinder Wright J-6 engine developing 150 h.p. at 2000 r.p.m., top speed of 130 m.p.h. It will be used in eastern territory.

The third is a Stinson Junior to be used in the central and northwestern sections of the country. It has a 210 h.p. Lycoming engine and a top speed of 130 m.p.h.

All airports over the country will be called on by airplane. Aviation oil business of air lines, aviation schools, sightseeing lines, transient planes, air taxies, and so on, will also be solicited. The regular "ground" salesmen of the Vacuum force will conduct the follow-up work at the airports in their territories, said H. W. Lake, sales manager of the aviation division.

The company makes three grades of aviation motor oils which it sells under the names of Mobiloil Aero "H," Mobiloil Aero "W" and Mobiloil Aero "XH." It also makes Mobilgrease for the lubrication of rocker arms.

The salesmen-pilots who will use these planes are Bailey A. Wright and Robert N. Williams, both experienced flyers and salesmen.

An Aviation Atlas, containing much historical data and statistics, has been put out by the Gulf Refining Co., **Pittsburgh, Pa.**

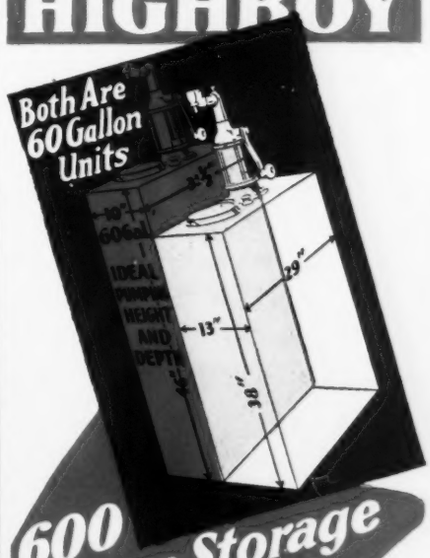
Among the data included on its 16 pages are physical maps showing all commercial air transport routes of North and South America and Europe; a world map tracing historic flights; photographs of pioneer and present day figures in the industry; a chronological review of aviation history; statistics and charts showing comparative development in this country and abroad and a comparison of air mail and railroad time between principal cities.

A motor fuel developed by engineers of The Texas Co. and the Packard Motor Car Co., which is known as Texaco Aerodiesel Fuel is now available at more than 300 airports over the country. The fuel is especially designed for Packard aircraft Diesel engines.

A mailing list has been established by the U. S. Coast and Geodetic Survey, Washington, so those who desire may be notified promptly when new or new editions of airway maps are available for sale. There is no charge for this service. An airway strip map to the scale of 1 to 500,000, or about eight miles to the inch, is now being published by the bureau.

L. H. Cooper makes ready to hop off to some distant airport to sell The Texas Co.'s aviation products in this Great Lakes biplane equipped with airwheels. This is the sixth plane in The Texas Co.'s fleet

The NEW 10" WIDE 60 GALLON HIGHBOY



600 Gallon Storage on 8⅓ Ft of Floor Space

Merchandise "GRADE"! ... Car Owners like it!

INCREASE YOUR RANGE OF GRADES — add the three extra grades that the trade is asking for by spotting ten of the new 10-inch wide, 60-gallon "HIGHBOYS" in the space formerly filled by seven of your old 60-gallon units. Each uses 3 inches less front space and 62 square inches less floor area than the conventional 60-gallon units.

Write for BULLETIN No. 607

20% less Floor Area Per Unit!

SERVICE STATION EQUIPMENT CO.

Main Office: Conshohocken, Pa. (Suburb of Philadelphia)

DIVISION OFFICES and WAREHOUSES COAST TO COAST

BENNETT EXPORT CORP.
32 Broadway, New York City

Which Meter Pump ?

TODAY it's not so much a question of meter pumps. Rather it is a question of "which meter pump." Modern methods of gasoline retailing call for the quick service and accuracy of the metered pump. The motorist has been educated to expect quicker service from the filling station equipped with metered pumps.

But the service station owners also have found that all meter pumps are not alike as far as accuracy and long-life are concerned. Some have installed reliable meter pumps. Others have purchased meter pumps that are still in the experimental stage. Not always have these latter meter pumps lived up to the claims made for them.

The Pump Depends on the Meter

Meter pumps are no better than the meter. The meter is the heart of the pumping system. It must be accurate from the start, and must sustain its accuracy for years to come. It must be simply designed and constructed. All moving parts must be reduced to a minimum to reduce wear.

The designers of the Buffalo Gasoline Meter have devoted their lives to the design and construction of liquid meters. Every new device has been checked, tested and retested. Experiment after experiment has been conducted with the objective of insuring the sustained accuracy of Buffalo Gasoline Meters, and eliminating wearing friction. The Buffalo Meter Company stands squarely behind every Buffalo Gasoline Meter ... and is your guarantee of a life-time of faithful, accurate service always. When you buy metered pumps.. be sure they are equipped with Buffalo Gasoline Meters. You will have no after-regrets.

Buffalo Meter Co., 2919 Main Street, Buffalo, N. Y.

Buffalo Gasoline Meters are the positive displacement nutating piston type ... the simplest of any type meter. There are no complicated parts to get out of order. Advanced design is your guarantee against obsolesence tomorrow.

BUFFALO GASOLINE METERS

TRADE MARK REG. U.S. PAT OFF

This illustrates the new book giving the complete story of gasoline retailing meters. Gladly will we send you a copy gratis. You should read your copy before you buy any type of gasoline retailing pumps. Ask for book entitled "Buffalo Gasoline Meters Overcome Competition."

Gasoline Demand Is Exceeding Early Estimates of 1930 Requirements

By J. C. Chatfield
N. P. N. STAFF WRITER

WHATEVER business conditions may be in other industries as a result of the late lamented stock market crash, our own industry has no grounds for complaint regarding the demand for gasoline. All figures now available from state tax reports and the U. S. Bureau of Mines show a demand for motor fuel running far ahead of estimates for the year.

Consumption of taxed gasoline in 43 states for the first two months of the year increased 14.6 per cent over the first two months of 1929 according to figures compiled by the American Petroleum Institute. The increase for February alone was 20.2 per cent over February, 1929. Increases of more than 40 per cent in February were shown by such states as Idaho, Iowa, Kansas, Minnesota, South Dakota and Wisconsin. With the exception of Idaho, all are important consuming states in the agricultural regions of the middle west.

In some areas the increase in gasoline consumption has not been as large. California, for example reports a consumption of 295,461,000 gallons in the first quarter of the year as compared with 287,770,000 gallons in the first quarter of 1929. This is a gain of only 2.67 per cent.

Bureau of Mines reports showing gasoline demand at refineries, somewhat ahead of actual consumption, indicate an increase of 12.78 per cent in domestic demand for United States as a whole in the first three months as compared with the first quarter of 1929. Daily average shipments for the first quarter were 926,000 barrels as compared with 821,000 barrels in the first quarter a year ago.

In connection with these figures it should be remembered that the first quarter of 1929 did not show as good an increase over 1928 as shown later in the year. The first quarter domestic shipments last year were only 9.6 per cent above 1928 while shipments in the first six months had climbed to 15 per cent above 1928. In other words the first quarter of 1929 was slow and the second quarter one of the best of the year.

This year the first quarter demand for gasoline has been excellent but it remains to be seen what the second quarter will hold forth. It is still too early to revise gasoline consumption estimates for the year up from 8 or 9 per cent to 12 or 13 per cent. Such a revision might be the cause of a great deal of grief.

Thus far this year our industry is

U. S. Gasoline Supply and Demand

(All figures in thousands of barrels)

Year	Daily Average — Production	Imports	Total New Supply	Domestic Shipments	Exports	Total Demand	Stock End of Period
1924	583	9	592	505	79	584	30,823
1925	711	10	721	613	86	689	38,875
1926	821	15	836	717	119	836	39,023
1927	905	14	919	813	121	934	33,316
1928	1,031	12	1,043	898	145	1,043	33,066
1929	1,201	24	1,225	1,030	168	1,198	43,131
Month							
Jan. 1929	1,119	16	1,135	740	150	890	40,668
Feb.	1,129	14	1,143	825	137	962	45,729
Mar	1,124	11	1,135	899	155	1,054	48,224
Apr.	1,167	27	1,194	1,079	154	1,233	47,038
May	1,182	23	1,205	1,113	169	1,282	44,672
June	1,199	24	1,223	1,117	194	1,311	42,017
July	1,233	30	1,263	1,201	195	1,396	37,906
Aug.	1,254	26	1,280	1,230	182	1,412	33,811
Sept.	1,250	30	1,280	1,152	147	1,299	33,247
Oct.	1,291	33	1,324	1,071	195	1,266	35,062
Nov.	1,256	33	1,289	1,061	136	1,197	37,797
Dec.	1,209	23	1,232	867	192	1,059	43,131
Jan. 1930	1,182	35	1,217	830	176	1,006	49,676
Feb.	1,212	34	1,246	947	173	1,120	53,229
Mar.	1,217	44	1,261	1,001	195	1,196	55,239
Per cent change from previous month	+0.37	+29.74	+1.18	+5.72	+13.03	+6.85	+3.78
Per cent change from Mar., 1929	+8.27	+300.00	+11.10	+11.35	+25.81	+13.47	+14.55

United States Supply and Demand of All Oils

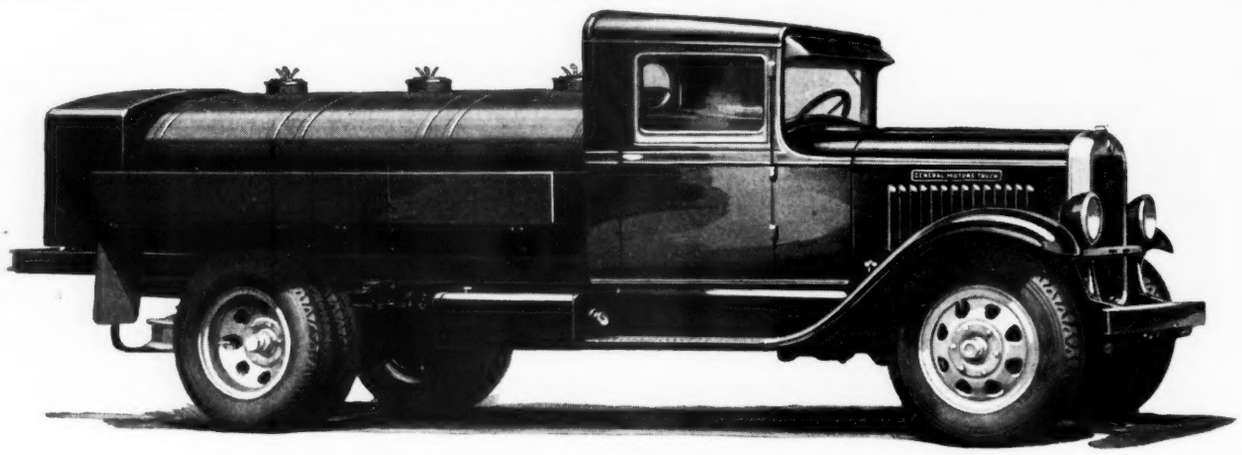
Daily Average (thousands of barrels)

Year	Crude Production	Crude Imports	Refined Imports	Natural Gasoline Production	Benzol Production	Total New Supply	Crude Exports	Refined Exports	Domestic Demand of All Oils	Total Demand	Total Petroleum Stocks	*Total Crude Stocks
1925	2,092	169	45	72	5	2,383	37	275	1,990	2,302	544,861	424,086
1926	2,112	165	57	89	6	2,429	42	318	2,137	2,497	521,136	397,434
1927	2,469	160	37	106	7	2,779	43	343	2,200	2,586	597,143	465,843
1928	2,463	218	32	116	8	2,837	52	370	2,352	2,774	619,925	490,788
1929	2,755	216	82	143	8	3,204	72	372	2,575	3,019	682,069	534,526
Month												
Jan. 1929	2,644	260	29	128	8	3,069	64	378	2,243	2,685	626,422	492,014
Feb.	2,703	251	32	133	8	3,127	60	340	2,389	2,789	635,927	499,897
Mar	2,662	219	48	139	9	3,077	51	348	2,373	2,772	645,381	506,081
Apr.	2,670	261	88	142	9	3,170	58	345	2,551	2,954	651,873	509,608
May	2,723	244	88	140	9	3,204	62	353	2,672	3,087	655,480	512,212
June	2,780	220	81	142	9	3,232	87	413	2,547	3,047	660,999	515,990
July	2,946	197	102	142	9	3,396	101	399	2,699	3,199	667,166	523,613
Aug.	2,977	187	111	145	9	3,429	72	407	2,783	3,262	672,317	532,975
Sept.	2,909	232	91	152	8	3,392	66	285	2,860	3,211	677,737	537,421
Oct.	2,842	186	117	158	9	3,312	93	450	2,649	3,192	681,484	538,313
Nov.	2,605	151	112	150	8	3,026	86	348	2,693	3,127	678,474	533,337
Dec.	2,592	190	77	144	8	3,011	67	396	2,431	2,894	682,069	528,939
Jan. 1930	2,563	176	123	142	8	3,012	59	386	2,405	2,850	687,468	528,817
Feb.	2,658	154	115	152	8	3,087	62	360	†2,457	†2,879	†693,315	533,286
Mar.	2,496	156	120	148	8	2,928	63	403	2,423	2,889	694,520	532,131
Per cent change from previous month	−6.09	+0.90	+4.02	−2.70	+3.34	−5.17	+1.44	+12.03	−1.37	+0.37	+0.17	−0.22
Per cent change from Mar., 1929	−6.24	−28.77	+150.00	+6.47	−0.75	−4.84	+23.53	+15.80	+2.11	+4.22	+7.61	+5.15

*Includes fuel oil in California. †Revised.

PROFITABLE

in OIL TRANSPORTATION *because of its* SPEED, POWER *and* ECONOMY!



$1545—2 TON RANGE

Model T-30 A

Price, Chassis Only, F.O.B. Pontiac, Mich.

THIS fast, rugged unit comes in three wheelbases—141″ (illustrated), 152″ and 164″—and in 14 different tire combinations. Chassis prices vary according to wheelbase and tire equipment. Straight Rating—11,000 lbs.—total gross weight including load.

THIS General Motors Truck—the Model T-30—now even stronger, more powerful and finer looking than ever—has solidly established its ability to *out-work* any truck in this capacity range. At less operating expense, the fact-and-figure experiences of owners plainly show.

They will tell you that in inter-city distribution, runs totaling from 150 to 225 miles constitute an ordinary day's work for this unit.

Put it to work and 100,000 miles from now it will still be on the job, delivering modern, dependable service, day in and day out, week in and week out.

The big, 6-cylinder engine, with its tremendous power output and smooth speed asks no favors of any engine in this range of duty. A steady, vibrationless flow of power is achieved by a torsional balancer and counterweighted crankshaft.

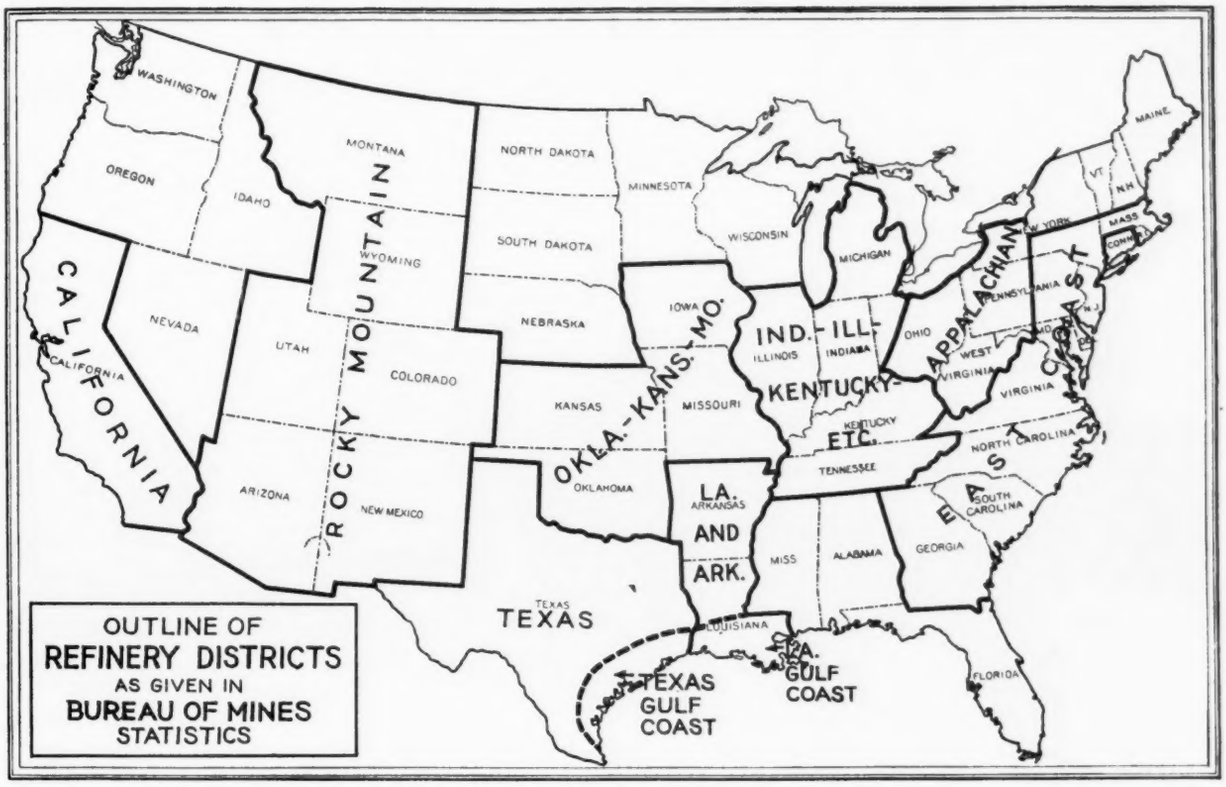
Other highlights: extra margins of hard, tough strength in the 6 9-16″ pressed steel frame—with five husky cross members . . . a "stress absorber" that spreads shocks at the point of maximum strain . . . big, long rear springs, with 5-leaved auxiliary springs that smooth out the roads and counteract side sway . . . a rear axle that stands the gaff—spiral, bevel gear, semi-floating type . . . powerful 4-wheel TRUCK brakes, simple adjustment . . . 4-speed transmission of proved durability . . . rugged, double-disc type clutch . . . remarkably easy steering . . . roomy, comfortable driver's compartment!

See and *drive* this great truck—let performance speak for itself!

GENERAL MOTORS TRUCKS

TIME PAYMENTS, on any General Motors Truck, are financed at lowest rates available anywhere, through our own Yellow Manufacturing Acceptance Corp.
GENERAL MOTORS TRUCK CO., Pontiac, Michigan (*Subsidiary of* Yellow Truck & Coach Mfg. Company) GENERAL MOTORS TRUCKS . . . YELLOW CABS . . . COACHES.
Factory Branches, Distributors, Dealers—in 1500 principal cities and towns.

A MODERN TRUCK FOR EVERY PURSE AND PURPOSE



getting the benefit of the operation of the large number of new cars sold last year and apparently has not had to suffer greatly from the junking of old cars. It appears that motorists who do not feel in a position to afford a new car are keeping the old one in service.

But the sale of new cars in the first quarter was far below last year. In response to the lower demand automobile manufacturers reduced their output from 1,452,910 units in the first quarter of 1929 to 998,566 units in the past three months. This was a cut of 31 per cent. Passenger car output was cut from 1,266,434 to 846,127 units, a reduction of 33 per cent. Truck output was dropped from 180,225 to 149,456 a cut of 17 per cent. The output of taxicabs was more than cut in half in the first quarter of this year as compared with the first three months of last year. The drop was from 6251 cabs to 2983 units.

Manufacturers of the low priced cars have not been hit as hard as others. For example Ford production in April was 206,340 as compared with 191,190 in April last year, a gain of about 8 per cent. Crysler showed a big gain in April over March but as compared with last April shipments of chrysler cars were off about 37 per cent from 59,785 to 37,527 units.

General Motors Corp. sold 368,635 cars and trucks to dealers and to export in the first quarter as compared with 523,119 units in the first quarter of last year. This was a loss of 154,484 units or about 29.6 per cent. Retail sales of General Motors dealers in the U. S. totaled 286,690 units in the first quarter as compared with 351,079 in the same quarter last year. This was a loss of about 19 per cent in retail sales.

It is understood that the automobile industry is making progress in working off surplus stocks but that there is some surplus remaining to be sold before the industry can get back on its usual hand-to-mouth basis for which it has been famous.

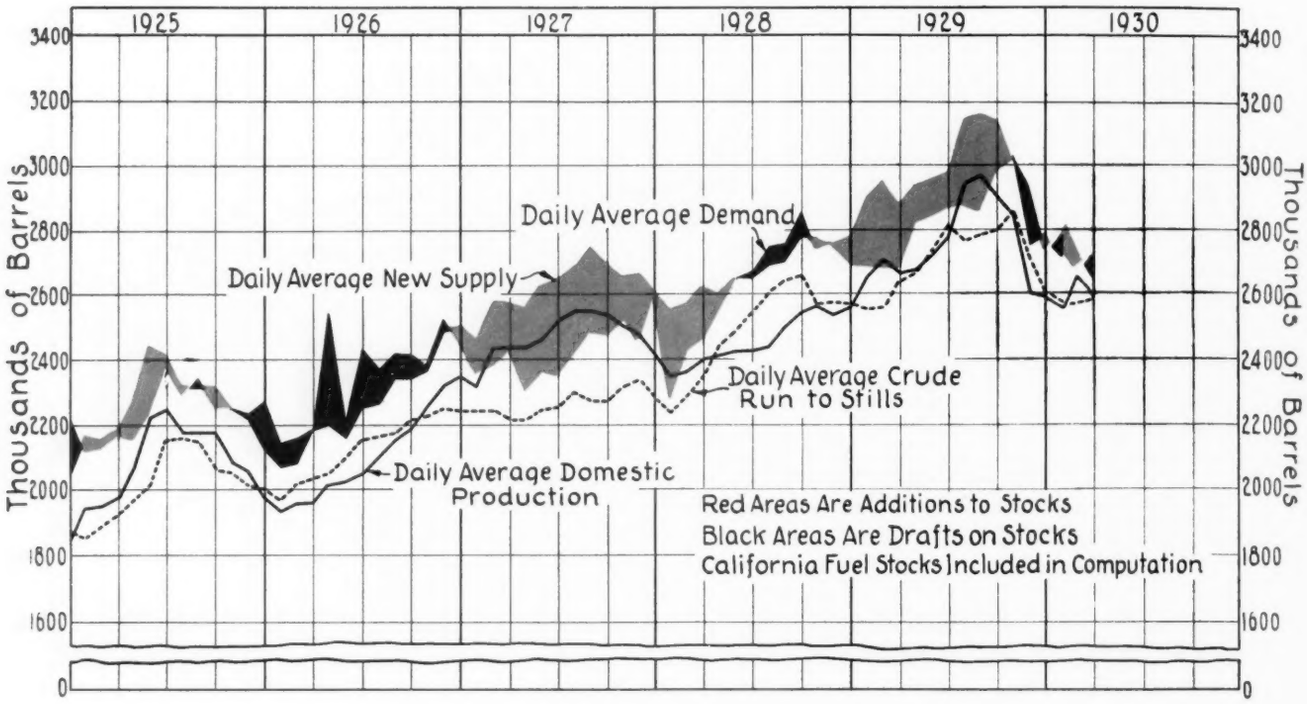
Taken as a whole business has been somewhat below that enjoyed in the first quarter a year ago. Car loadings of revenue freight on U. S. railroads was 7 per cent less in the first quarter than the average for the past

Daily Average U. S. Crude Runs To Stills

(Barrels)

Year	East Coast	Appalachian	Indiana-Illinois	Oklahoma-Kansas	Inland Texas	Inland La. Ark.	Gulf Texas	Gulf Louisiana	Rocky Mountain	California	UNITED STATES
1924	369,404	59,994	154,096	217,762	84,673	34,598	256,921	100,421	73,052	407,869	1,758,795
1925	352,030	68,817	183,997	267,430	98,512	44,491	296,781	139,063	71,682	504,375	2,027,178
1926	357,926	78,088	190,978	264,400	99,131	53,444	328,567	141,110	80,014	541,312	2,134,970
1927	412,173	79,313	207,494	279,095	101,647	54,925	356,130	138,188	68,647	572,995	2,270,609
1928	465,865	91,902	270,052	304,117	131,296	61,923	376,999	144,412	71,183	575,783	2,493,617
1929	472,422	92,608	302,326	316,299	159,762	67,882	420,219	138,770	69,707	666,055	2,706,050
Month											
Jan. 1929	453,065	92,839	277,774	294,710	138,355	61,193	384,387	149,903	68,839	621,677	2,542,742
Feb.	456,357	86,322	276,929	289,321	150,643	66,929	416,071	152,214	67,179	610,571	2,572,536
Mar.	448,357	89,258	272,323	299,936	151,000	72,032	414,290	150,548	70,097	633,194	2,603,484
April	459,267	97,267	291,100	317,967	167,467	71,500	413,733	146,333	72,700	644,633	2,681,967
May	477,677	98,065	297,613	322,774	181,839	70,968	415,290	145,484	72,935	640,581	2,723,226
June	510,000	102,733	315,467	330,133	174,933	71,067	417,933	134,900	74,067	682,100	2,813,333
July	458,452	95,161	317,161	325,258	170,161	63,323	413,742	124,484	74,710	729,129	2,771,581
Aug.	491,742	89,258	334,000	332,839	164,774	66,290	404,387	131,097	72,678	710,774	2,797,839
Sept.	485,800	92,367	318,667	328,500	158,667	77,100	444,266	127,567	71,700	698,666	2,803,300
Oct.	482,290	96,065	317,323	321,355	162,871	71,322	461,677	136,839	69,000	732,548	2,851,290
Nov.	485,800	88,300	308,800	322,967	154,367	63,867	433,667	133,833	62,300	648,133	2,702,034
Dec.	459,903	83,387	297,097	308,322	141,710	59,290	423,710	132,935	60,097	635,581	2,602,032
Jan. 1930	470,613	86,613	304,161	299,032	157,194	65,129	436,613	117,097	56,968	592,484	2,585,904
Feb.	452,714	92,857	298,679	297,250	171,501	63,000	444,536	120,821	59,321	585,536	2,586,215
Mar.	453,323	89,613	326,806	317,774	163,742	64,064	447,839	108,032	58,129	559,452	2,588,774
Per cent change from previous month	+0.13	—3.49	+9.42	+6.90	—4.52	+1.69	+0.74	—10.58	—2.01	—4.45	+0.10
Per cent change from Mar., 1929	+1.11	+0.40	+20.01	+5.95	+8.44	—11.06	+8.10	—28.23	—17.07	—11.65	—0.56

Crude Oil Production and Demand



	Bbls. daily av.
March domestic production	2,496,000
March imports	156,000
Total new supply	2,652,000
March indicated demand east of California	2,016,000
March indicated demand for California exclusive of exports	611,000
March exports	63,000
Total indicated demand	2,690,000

	Bbls.
Stocks at refineries east of California, March 31	45,884,000
Stock in pipe lines and at tank farms east of Calif.	334,082,000
Stock of light California crude	44,710,000
Stock of heavy California crude and fuel	107,414,000
*Total stock of crude	532,131,000
Decrease in stocks in March	1,155,000
Stocks March 31, 1929	506,081,000

*Exclusive of stocks held by producers which amounted to 6,150,000 barrels.

five years. Exports for March were 24 per cent less in value than in March. 1929. Retail sales of large department stores were 6 per cent less in value in the first quarter than in the first quarter last year although the turnover was satisfactory. Prices of commodities were lower. Chain stores generally have shown an increase in tonnage and some increase in dollar value of sales although figures are not comparable due to growth in outlets.

Taking general conditions into account it becomes apparent that the oil industry is probably less subject to fluctuations in business conditions than most other industries. It seems that even in short periods of depression the public will continue to ride automobiles and buy gasoline the same as it must buy food. In other words, gasoline has become a necessity in the average household.

U. S. Gas Oil and Distillate Fuels Supply and Demand

(Barrels)

Month	Daily Avg. Production	Daily Avg. Shipments	Stocks (000 omitted)
Jan. 1930	216,355	.....	14,911
Feb.	212,750	272,464	13,239
Mar.	201,000	202,774	13,184
Per cent change from previous month	—5.52	—25.58	—0.42

U. S. Residual Fuel Oil

(Barrels)

Month	Daily Avg. Production	Stocks Exclusive of Calif.	Calif. Stocks Including Heavy Crude (000 omitted)
Jan. 1930	855,032	20,962	107,123
Feb.	901,000	21,041	107,739
Mar.	834,839	19,814	107,414
Per cent change from previous month	—7.34	—5.83	—0.30

Gasoline

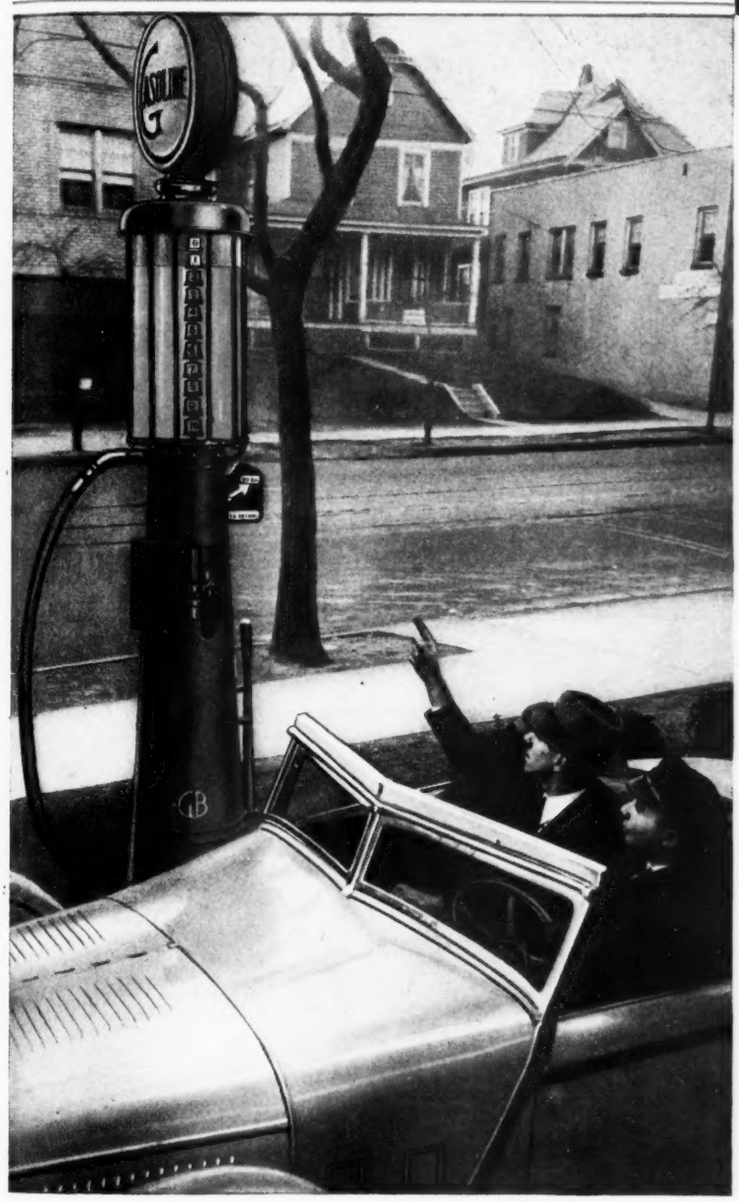
U. S. production of gasoline increased 7.12 per cent in the first quarter and imports 171.43 per cent bringing new supply up 9.06 per cent over the first quarter last year.

Exports of gasoline were 23.13 per cent greater than last year and, as mentioned before, domestic demand was 12.78 per cent greater, bringing

U. S. Gas and Fuel Oil Supply and Demand Exclusive of California

(All figures in thousands of barrels)

Year	Total U. S. Production Including Calif.	Daily Average Production	Imports	Total New Supply	Domestic Shipments	Exports	Total Demand	Total Stocks End of Period
1924	876	590	35	625	490	102	592	19,556
1925	1,000	644	34	678	531	99	630	24,681
1926	1,000	620	39	659	515	105	620	24,898
1927	1,077	680	22	902	525	130	655	34,022
1928	1,167	797	20	817	673	121	794	34,926
1929	1,227	834	56	890	729	107	836	34,425
Month								
Jan. 1929	1,188	815	11	826	774	119	893	32,522
Feb.	1,226	858	17	875	844	100	944	30,118
Mar.	1,208	826	37	863	740	84	824	30,195
Apr.	1,251	868	59	927	665	96	761	33,404
May	1,244	875	64	939	703	100	803	35,636
June	1,245	855	55	910	686	112	798	37,332
July	1,225	794	71	865	592	114	706	40,075
Aug.	1,258	820	84	904	729	115	844	39,316
Sept.	1,249	832	60	892	722	65	787	40,646
Oct.	1,257	831	84	915	763	131	894	38,717
Nov.	1,205	835	77	912	742	137	879	37,399
Dec.	1,170	802	53	855	788	109	897	34,425



WELL DISPLAYED COLORED GAS IS HALF SOLD.

MOTORISTS never fail to recognize a unique, colored gasoline—when it is served in G & B Visibles. No wire guard to obstruct the sparkle. No opportunity for the sun to fade or tan the color. The NULTRA glass Solex bowl protects it from all sun rays. Many other advantages. Nozzle control. Progressive delivery. Semaphore signal to show where gas goes. Fast, double action pump. Write or wire for Bulletin T-176 explaining this extraordinary pump—today.

GILBERT AND BARKER
MANUFACTURING COMPANY
PUMPS AND TANKS FOR THE OIL TRADE
SPRINGFIELD, MASS.

"DEPENDABLE PUMPS—FOR EVERY SERVICE STATION NEED"

total demand up 14.24 per cent over the first quarter of 1929.

Stocks of gasoline were increased 12,108,000 barrels in the first quarter to 55,239,000 barrels on March 31. This was an increase of 14.55 per cent over stocks at the close of March 1929. In the first quarter last year stocks of gasoline increased 15,158,000 barrels at refineries to 48,224,000 barrels.

Natural Gasoline

In spite of general proration in the flush producing fields during the first quarter production of natural gasoline increased approximately 10 per cent over production in the first quarter of 1929. Daily average output for the past three months was 147,188 barrels as compared with 133,730 barrels per day in the same quarter last year.

Demand for natural gasolines was much better this year than in the first quarter of 1929. Natural gasoline shipments to blenders average 146,485 barrels per day in the quarter as compared with 129,464 barrels per day in the first three months of last year.

Natural gasoline stocks March 31 totaled 673,357 barrels as compared with 603,857 barrels on Dec. 31, an increase of only 69,500 barrels, or 11.5 per cent. A year ago natural gasoline stocks totaled 995,286 barrels. The increase in the first quarter of 1929 was 388,143 barrels or about 64 per cent.

Crude Runs to Stills

Crude runs at U. S. refineries were only 0.55 per cent greater in the first three months this year than last. Decrease in daily average runs were made by California, Rocky Mountain, Louisiana and Arkansas. Gulf coastal Louisiana crude runs were 23.57 per cent less in the first quarter than in the first quarter of 1929, and California runs were 6.86 per cent less.

The largest increases were shown by Indiana-Illinois and Texas refiners. The Indiana-Illinois group increased runs 12.41 per cent in the first quarter as compared with the same period last year. Inland Texas runs were increased 11.92 per cent and Gulf coastal Texas runs were increased 9.40 per cent.

Kerosene

New supply of kerosene in the first quarter was 0.65 per cent less in the first quarter than a year ago in the first quarter. This was due almost entirely to a cut of 76.14 per cent in imports.

Total demand for kerosene meanwhile was down 4.82 per cent from the first quarter of 1929 due to a drop of 1.88 per cent in domestic shipments and 10 per cent in exports.

Lubricating Oils

Domestic demand for lubricating oils in the first quarter was 54,700 barrels per day as compared with 54,300 barrels per day in the first quarter of last year, an increase of only 400 barrels per day. At the same time export demand fell from 33,300 barrels per day to 28,000 barrels per

U. S. Kerosene Supply and Demand

(All figures in thousands of barrels)

Year	Daily Avg. Production	Total Imports (Bbls.)	Daily Average: Total New Supply	Daily Average: Domestic Shipments	Daily Average: Exports	Daily Average: Total Demand	Total Stocks End of Period
1924	164	27	164	100	60	160	8,594
1925	163	52	163	110	58	168	7,121
1926	169	203	169	104	61	165	8,575
1927	154	151	154	102	54	156	7,715
1928	162	552	163	99	60	159	9,001
1929	157	621	158	102	55	157	9,039
Month							
Jan. 1929	152	1,226	153	95	62	157	8,865
Feb.	158	714	159	126	57	183	8,210
Mar.	146	161	146	96	61	157	7,855
Apr.	148	700	149	105	55	160	7,497
May	158	194	158	103	47	150	7,742
June	164	500	165	85	60	145	8,348
July	142	484	142	87	42	129	8,797
Aug.	165	774	166	103	66	169	8,689
Sept.	156	....	156	113	37	150	8,864
Oct.	174	323	174	101	73	174	8,865
Nov.	161	1,133	162	101	44	145	9,366
Dec.	156	645	157	113	54	167	9,039
Jan. 1930	145	290	145	97	64	161	8,571
Feb.	157	179	157	114	43	157	8,565
Mar.	153	32	153	101	56	157	8,455
Per cent change from previous month	—2.41	—82.12	—2.41	—12.13	+30.91	—0.38	—1.28
Per cent change from Mar. 1929	+4.79	—80.12	+4.79	+5.21	—8.20	.....	+7.64

U. S. Lubricating Supply and Demand

(All figures in thousands of barrels)

Year	Production	Imports (Bbls.)	Daily Average: Total New Supply	Daily Average: Domestic Shipments	Daily Average: Exports	Daily Average: Total Demand	Total Stocks End of Period
1924	75	30	75	50	25	75	6,420
1925	85	101	85	56	27	83	7,253
1926	88	90	88	62	26	88	7,576
1927	87	22	87	59	27	86	7,860
1928	95	36	95	63	30	93	8,340
1929	94	107	94	64	30	94	8,269
Month							
Jan. 1929	95	33	95	49	36	85	8,649
Feb.	89	143	89	63	31	94	8,534
Mar.	97	65	97	51	34	85	8,853
Apr.	97	100	97	81	26	107	8,527
May	97	129	97	75	27	102	8,370
June	98	200	98	82	33	115	7,869
July	95	129	95	70	36	106	7,524
Aug.	101	161	101	73	30	103	7,478
Sept.	95	100	95	68	23	91	7,589
Oct.	93	65	93	44	35	79	8,021
Nov.	85	100	85	62	20	82	8,117
Dec.	89	65	89	55	29	84	8,269
Jan. 1930	93	97	93	42	29	71	8,956
Feb.	97	36	97	*54	31	*85	*9,289
Mar.	101	97	101	68	24	92	9,561
Per cent change from previous month	+3.34	+169.44	+3.40	+25.68	—24.31	+7.52	+2.93
Per cent change from Mar., 1929	+4.12	+49.23	+4.12	+33.33	—29.41	+8.24	+8.00

*Revised.

U. S. Wax Supply and Demand

(All figures in thousands of pounds)

Year	Production	Imports	Daily Average: Total New Supply	Daily Average: Domestic Shipments	Daily Average: Exports	Daily Average: Total Demand	Total Stocks End of Period
1924	1,411	35	1,446	605	1,046	1,651	89,706
1925	1,618	40	1,658	669	916	1,585	116,391
1926	1,769	27	1,796	688	919	1,607	185,331
1927	1,601	56	1,657	774	933	1,767	167,214
1928	1,722	68	1,790	826	1,073	1,899	110,344
1929	1,726	111	1,837	752	873	1,625	187,990
Month							
Jan. 1929	1,900	96	1,996	665	905	1,570	123,521
Feb.	1,787	111	1,898	402	906	1,308	140,053
Mar.	1,818	83	1,901	596	714	1,310	158,404
Apr.	1,933	89	2,022	857	755	1,612	170,687
May	1,735	89	1,824	949	602	1,551	179,139
June	1,757	102	1,859	706	833	1,539	188,764
July	1,489	149	1,638	768	789	1,557	191,298
Aug.	1,722	175	1,897	1,004	907	1,911	190,878
Sept.	1,484	97	1,581	753	1,066	1,819	183,714
Oct.	1,819	127	1,946	513	1,259	1,772	189,094
Nov.	1,693	87	1,780	1,008	890	1,898	185,559
Dec.	1,584	125	1,709	780	850	1,630	187,990
Jan. 1930	1,689	72	1,761	239	1,043	1,282	206,249
Feb.	1,820	77	1,897	968	670	1,638	213,487
Mar.	1,978	67	2,045	793	648	1,441	232,241
Per cent change from previous month	+8.68	—12.66	+7.82	—18.15	—3.35	—12.09	+8.78
Per cent change from Mar. 1929	+8.80	—19.28	+7.57	+33.05	—9.24	+10.00	+46.61

U. S. Natural Gasoline Supply and Demand

(Barrels)

Year	Daily Avg. Production	Daily Avg. Shipments	Stocks
1924	.....	.....	302,380
1925	72,074	45,883	328,571
1926	88,095	88,258	454,762
1927	104,762	105,147	733,333
1928	116,667	115,990	607,143
1929	142,857	143,140	603,857
Month			
Jan. 1929	128,571	124,194	741,429
Feb.	133,095	130,336	820,595
Mar.	139,524	133,843	995,286
Apr.	142,143	136,449	1,166,095
May	140,097	132,855	1,390,452
June	141,667	142,806	1,356,262
July	142,484	148,940	1,155,786
Aug.	145,387	153,855	893,429
Sept.	152,467	160,208	661,000
Oct.	158,452	163,958	490,214
Nov.	150,133	149,370	513,881
Dec.	143,779	140,876	603,857
Jan. 1930	142,243	142,005	611,214
Feb.	151,701	153,093	572,214
Mar.	147,619	144,356	673,357
Per cent change from previous month	—2.69	—5.71	+17.68
Per cent change from Mar., 1929	+5.80	+7.85	—32.35

day, a loss of 5,300 barrels daily average.

Production of lubricating oils in the first quarter averaged 97,000 barrels per day as compared with 94,000 barrels in the first quarter last year. Production thus was 3000 barrels larger while total demand was 4900 barrels smaller on a daily average basis. Stocks March 31 were 9,561,000 barrels as compared with 8,269,000 barrels Dec. 31, an increase of 15.62 per cent.

Wax

An improvement in domestic demand for wax is shown by Bureau of Mines figures for the first quarter, average shipments being 666,000 pounds per day as compared with 554,000 pounds in the first quarter of last year. Export demand, however, fell from 842,000 pounds daily average in the first quarter of 1929 to 787,000 pounds per day in the past three months.

Wax stocks at refineries March 31 totaled 232,241,000 pounds as compared with 187,990,000 pounds Dec. 31, 1929, an increase of 44,251,000 pounds in the three months. A year ago on March 31 wax stocks totaled 158,404,000 pounds, 73,837,000 pounds less than this year.

Fuel and Gas Oil

Beginning with the January report the Bureau of Mines began showing distillate fuel and gas oil separate from residual fuel oil. Since that time there has been a steady reduction in stocks. February shipments exceeded production by 59,114 barrels per day and March shipments exceeded output by 1,774 barrels per day. Stocks March 31 were 13,184,000 barrels as compared with 14,911,000 barrels on Jan. 31, a reduction of 1,727,000 barrels.

In the same period stocks of residual fuel oil east of California have been reduced 1,148,000 barrels, from 20,962,000 barrels Jan. 31 to 19,814,000 barrels March 31. Stocks of residual fuel and heavy crude in California have shown little change in two months.

SPEEDS UP
· · Service and Profits

Four models to choose from—supplied in either free-wheel or drive-on type—every OTTAWA LIFT quickly pays for itself in speedier service rendered and the increased profits it brings.

Each of OTTAWA'S four models is rotating for maximum efficiency. The heavier models—full hydraulic and oil supported—may be locked in any position, leaving the compressor free to finish the job. The new low-priced OTTAWA—a combination of oil supported, semi-hydraulic and air operation—brings super service to every station for only $250, F. O. B. Ottawa.

Easily installed from blue prints furnished—*operates from your air compressor*—only one moving part, nothing to wear out or go wrong.

Write today for full particulars—also prices of Ottawa Visible Pumps, Air Compressors and Air Towers!

OTTAWA MANUFACTURING CO.
233 Fuller St., Ottawa, Kansas

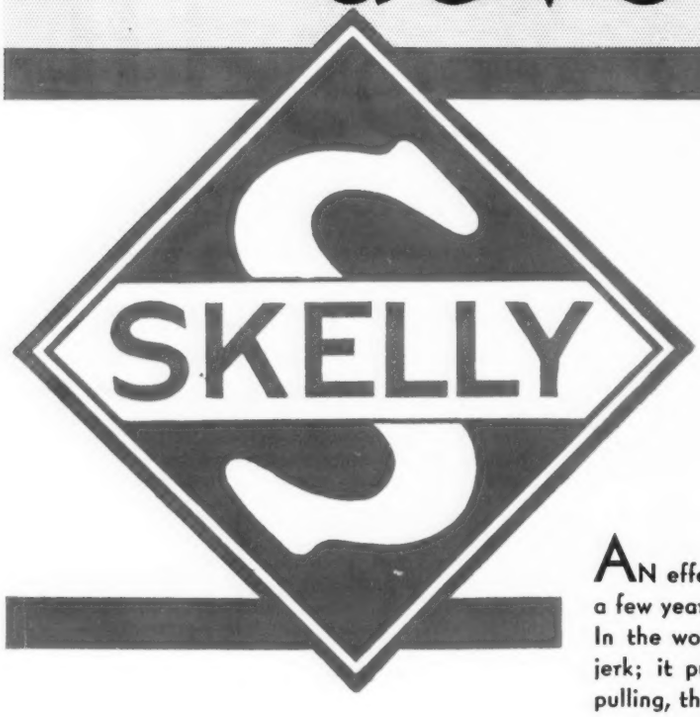
OTTAWA LIFT

HIGH GRADE PETROLEUM PRODUCTS
Made by the Oldest Pennsylvania Oil Refiners

CYLINDER STOCKS, (Filtered and Unfiltered).
MOTOR OILS—to match any specification.
High Grade Burning Oils.
300° Mineral Seal and Railroad Oils.
High Grade Transformer Oils.

A. D. MILLER SONS' COMPANY
PITTSBURGH, PA.

"many years advertising"



-8-

AN effective advertising job cannot be done in a year, or i a few years, according to the best advertising men of the natio In the words of the late John Wanamaker, "advertising doesn jerk; it pulls." And the longer time it has in which to do i pulling, the more effective it becomes.

Skelly Oil Company was the pioneer mid-continent refiner t develop a completely rounded out advertising program to he the jobber sell. Noting the success major companies were havin in attracting customers to their own stations through advertisin Skelly decided that a similar job could be done for jobbers.

Convinced no one-year campaign could prove the full worth o advertising, Skelly announced its first program as the "Skelly 3 Year Merchandising Campaign" and committed itself, to its jobbe friends, to continue its campaign for at least three years. Suc a period was needed, the announcement stated, to build up a worth while acceptance which would be of definite help to the jobber.

The background of many years of steady advertising of Skel products is the secret of the present day success of Skelly adve tising. Advertising cumulates in value, and every dollar Skel has spent in past years is helping make today's advertising mo effective.

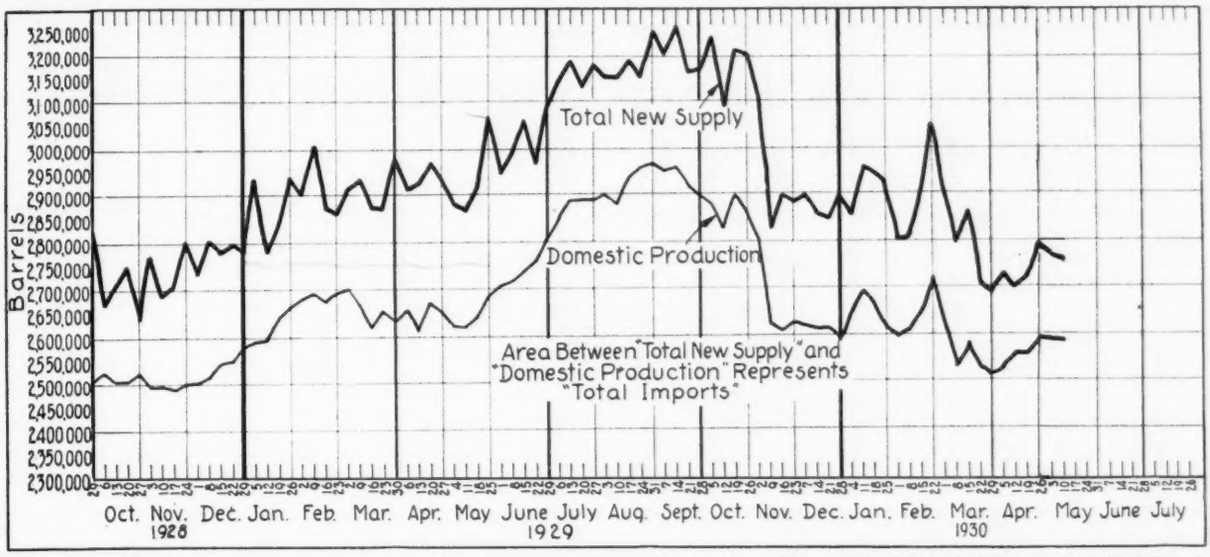
The Skelly program is well-rounded. Newspapers and far papers carry the story of the quality of the products. The large display of 10x50 highway boards used by any advertiser in th

Note

This is the eighth of a series of advertisements amplifying the ten points in the chart reproduced above, which first appeared in the March 19 issue of National Petroleum News. Others of the points will be discussed at regular intervals.

ADVERTISING PAGES IN

Daily Average Crude Oil Production and Imports


Barrels
Total New Supply
Domestic Production
Area Between "Total New Supply" and "Domestic Production" Represents "Total Imports"
Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July
1928
1929
1930

By Telegraph—Daily average gross output, by fields in U. S., for week ending with dates below as compiled by A.P.I.

PRODUCTION SUMMARY	May 10	May 3
Production east of Rockies	1,960,350	1,962,100
Decrease		1,750
Total production in U. S.	2,595,150	2,595,200
Decrease		50
Crude oil imports	166,715	183,430
Decrease		16,715
Total crude supply	2,761,865	2,778,630
Decrease		16,765

OKLAHOMA	May 10	May 3
Allen Dome	18,950	19,500
Asher	1,950	2,050
Blackwell	3,700	3,300
Bowlegs	14,400	19,000
Braman	3,500	3,500
Bristow-Slick	16,050	16,150
Burbank	16,500	16,600
Carr City	9,900	8,700
Cromwell	7,600	7,600
Cushing	13,900	14,000
Davenport	1,150	1,200
Duncan District	7,700	7,750
Earlsboro	40,750	40,000
East Earlsboro	36,250	36,100
Fox	1,250	1,250
Garber	4,750	4,750
Graham	3,500	3,500
Healdton	11,900	11,900
Hewitt	7,000	7,000
Hubbard	1,600	1,600
Konawa	15,700	9,200
Little River	32,100	37,800
Little River, East	15,500	18,550
Logan County	5,700	7,000
Maud	5,900	5,500
Mission	13,050	12,600
North Okmulgee	10,450	10,600
Oklahoma City	113,250	116,450
Osage (outside Burbank)	26,100	26,200
Papoose	2,850	2,850
Pearson	800	700
Sasakwa	10,800	10,500
St. Louis	43,700	36,600
Scholem-Alechem	13,650	13,700
Searight	8,950	10,000
Seminole	15,450	19,600
Seminole, East	3,700	3,500
South Okmulgee	6,250	6,300
Thomas	650	700
Tonkawa	7,800	7,800
Wewoka	3,700	3,700
Yale-Jennings	8,600	8,600
Others	66,400	64,900
Total, Oklahoma	653,350	658,800
Decrease		5,450

KANSAS		
Augusta-Fox Bush	2,950	2,950
Churchill	4,000	4,400
El Dorado-Towanda	14,300	14,300
Florence-Covert	800	800
Greenwood County	19,000	19,000
Oxford	2,850	2,800
Peabody-Elbing	3,100	3,100
Rainbow Bend	1,100	1,100
Russell	3,550	3,350
Sedgwick County	21,200	21,000
Voshell	17,850	19,350
Others	36,450	33,300
Total, Kansas	127,150	125,450
Increase		1,700

NORTH LOUISIANA		
Caddo, light	9,850	9,950
Caddo, heavy	2,900	2,850
Cotton Valley	2,150	2,100
De Soto and Red River	3,100	4,150
Haynesville	4,500	4,450
Holly	850	950
Homer	3,550	3,400
Sarepta Carterville	3,600	3,200
Urania	5,400	5,200
Zwolle	3,550	2,950
Others	1,700	1,700
Total, North Louisiana	41,150	40,900
Increase		250

ARKANSAS		
Champagnolle	4,100	4,600
El Dorado	4,100	3,950
Lisbon	1,000	1,000
Nevada	950	850
Smackover, light	5,300	5,250
Smackover, heavy	40,250	40,250
Stephens	950	950
Others	1,200	1,200
Total, Arkansas	57,850	58,050
Decrease		200

TEXAS (Outside Gulf Coast)		
Panhandle District		
Carson County	9,000	9,100
Gray County	68,250	70,900
Hutchinson County	24,300	22,150
Wheeler County	900	900
Others	400	500
Total, Panhandle Texas	102,850	103,550
Decrease		700
North Texas		
Archer County	18,550	18,100
Burkburnett	8,300	8,300
Electra	11,100	11,100
Iowa Park and K. M. A.	5,700	5,700
Montague-Cooke	10,500	10,600
Wilbarger	24,050	24,100
Others	1,900	2,000
Total, North Texas	80,100	79,900
Increase		200
West Central Texas		
Brown County	7,600	7,600
Callahan County	4,000	3,600
Coleman County	4,200	4,600
Eastland-Desdemona	5,500	5,500
Jack County	4,100	4,100
Palo Pinto County	650	700
Shackleford County	6,650	6,550
Stephens County	6,150	5,850
Throckmorton County	1,150	800
Young County	18,800	18,550
Others	1,150	1,400
Total, West Central Texas	59,950	59,250
Increase		700
West Texas		
Crane and Upton Counties	44,300	42,000
Crockett County	2,000	2,000
Ector County	14,100	13,500
Howard County	38,000	39,050
Jones County	1,400	2,100
Mitchell and Scurry Counties	2,250	2,100
Reagan County	16,400	16,600
Winkler County	77,800	78,450
Yates	113,500	115,000
Balance Pecos County	4,800	4,600
Others	2,800	2,900
Total, West Texas	317,350	318,300
Decrease		950
East Central Texas		
Boggy Creek	3,600	3,700
Corsicana-Powell	6,100	6,000
Currie	300	300
Mexia	4,300	4,250
Nigger Creek	200	200
Richland	250	250
Van Zandt	23,500	21,100
Wortham	900	900
Total, East Central Texas	39,150	36,700
Increase		2,450
Southwest Texas		
Dale	300	300
Darst Creek	19,750	20,000
Laredo District	8,200	8,300
Luling	9,500	9,650
Lytton Springs	850	850
Salt Flat	22,300	21,250
Somerset	1,200	1,300
Others	1,750	1,850
Total, Southwest Texas	63,850	63,500
Increase		350
Total, Texas (Outside Gulf Coast)	663,250	661,200
Increase		2,050

GULF COAST		
Coastal Texas		
Barbers Hill	18,200	19,600
Batson	1,100	1,200
Big Creek	4,300	4,400
Blue Ridge	2,100	2,100
Boling	1,050	1,100
Damon Mound	600	600
Esperson	3,450	2,800
Fannett	1,350	1,150
Goose Creek	4,500	4,400
Hull	10,100	9,300
Humble	18,800	19,800
North Dayton	550	650
Orange County	2,350	2,350
Pierce Junction	9,350	9,050
Port Neches	1,600	1,650
Raccoon Bend	12,000	10,100
Refugio County	38,850	37,800
Saratoga	1,100	1,000
Somerville	1,600	1,700
Sour Lake	2,350	2,200
South Liberty	4,600	4,700
Spindletop	16,200	17,100
Surgarland	11,850	10,200
West Columbia	5,600	5,750
Others	9,500	8,300
Total, Coastal Texas	183,050	179,000
Increase		4,050
Coastal Louisiana		
East Hackberry	2,200	2,300
Old Hackberry	1,300	1,300
Edgerly	550	500
Evangeline	800	800
Lake Barre	900	900
Lockport	2,750	2,600
Port Barre	2,000	1,900
Sulphur Dome	5,900	5,800
Vinton	3,700	3,900
Others	2,000	2,100
Total, Coastal Louisiana	22,100	22,100
Total, Gulf Coast	205,150	201,100
Increase		4,050

ROCKY MOUNTAIN		
Wyoming		
Big Muddy	2,050	2,050
Elk Basin	750	700
Grass Creek	2,100	2,050
Labarge	1,850	2,100
Lance Creek	150	150
Lost Soldier	2,950	3,050
Oregon Basin	4,700	4,450
Rock River	2,200	2,150
Salt Creek	26,100	31,750
Others	5,150	3,850
Total, Wyoming	48,000	52,300
Decrease		4,300
Montana		
Cat Creek	1,200	1,200
Pondera	2,350	2,350
Sunburst	5,600	5,600
Others	50	50
Total, Montana	9,200	9,200
Colorado		
Florence	550	600
Fort Collins	1,500	1,400
Moffat (Craig)	1,000	1,050
Others	1,550	1,500
Total, Colorado	4,600	4,550
Increase		50
New Mexico		
Artesia	700	700
Balance Lea and Eddy Counties	9,900	8,600
Hogback	450	450
Rattlesnake	400	400
Table Mesa	100	100
Others	900	900
Total, New Mexico	12,450	11,150
Increase		1,300
Total, Rocky Mountain	74,250	77,200
Decrease		2,950

CALIFORNIA		
Dominguez	10,000	9,800
Elwood-Goleta	45,300	47,800
Huntington Beach	28,300	28,200
Inglewood	17,400	17,200
Kettleman Hills	15,000	15,300
Long Beach	99,800	98,900
Midway-Sunset	68,000	69,000
Santa Fe Springs	134,500	133,200
Seal Beach	23,500	24,000
Ventura Avenue	49,000	47,700
Others	144,000	142,000
Total, California	634,800	633,100
Increase		1,700

EASTERN		
(Not including Michigan)	127,000	128,000
Decrease		1,000
MICHIGAN		
Mt. Pleasant	6,750	6,800
Muskegon	4,300	4,400
Saginaw	150	200
Total, Michigan	11,200	11,400
Decrease		200

Compilation Of Mid-Continent Refinery Operations

All Rights Reserved to The National Petroleum Publishing Co.

National Petroleum News

Mid-Continent Refinery Operations Week Ended May 9 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended May 9
Plants Reporting	12	29	25	15	12	93
Da. Av. Cap. (Bbls.)	94,500	161,700	106,100	82,000	77,000	521,300
Da. Cracking Capacity	30,700	52,600	17,200	5,000	22,700	128,200
Da. Av. Crude Runs	64,382 — 1.2	116,739 — 5.8	73,072 + 8.3	45,196 + 36.9	53,412 — 12.7	352,801 + 0.6
Da. Av. Other Oils	7,806 + 17.9	4,246 — 40.4	1,582 —62.9	4,392 + 18.2	426 — 60.2	18,452 — 19.1
GASOLINE—Gallons						
Stocks, May 2	27,514,000	71,014,000	24,096,000	*9,209,000	14,125,000	*145,958,000
Prod. 5-2 to 5-9	11,252,000 + 2.9	18,931,000 + 1.0	9,936,000 + 11.5	4,671,000 + 36.3	5,268,000 — 10.5	50,058,000 + 4.5
Ship. 5-2 to 5-9	11,185,000 + 18.9	17,046,000 — 0.6	8,221,000 — 0.8	3,035,000 — 23.7	3,911,000 — 31.3	43,398,000 — 2.5
Stocks, May 9	27,581,000 + 0.2	72,899,000 + 2.7	25,811,000 + 7.1	10,838,000 + 17.8	15,482,000 + 9.6	152,611,000 + 4.6
Ratio Sales to Prod.	99.4%	90.0%	82.7%	65.0%	74.2%	86.7%
KEROSENE—Gallons						
Stocks, May 2	8,168,000	7,443,000	3,039,000	13,000	1,862,000	20,525,000
Prod. 5-2 to 5-9	2,065,000 — 0.3	2,910,000 + 9.5	1,786,000 + 12.8	.....	489,000 — 6.7	7,250,000 + 6.1
Ship. 5-2 to 5-9	1,760,000 — 9.3	2,538,000 + 19.9	1,312,000 — 12.9	—12,000	609,000 + 42.3	6,207,000 + 3.4
Stocks, May 9	8,473,000 + 3.7	7,815,000 + 5.0	3,513,000 + 15.6	25,000 + 92.3	1,742,000 — 6.4	21,568,000 + 5.1
Ratio Sales to Prod.	85.2%	87.2%	73.5%	.....	124.5%	85.6%
STOVE DISTILLATE—Gallons						
Stocks, May 2	3,171,000	2,609,000	262,000	216,000	549,000	6,807,000
Prod. 5-2 to 5-9	251,000 — 9.1	463,000 — 15.7	151,000 — 23.0	115,000 — 12.2	13,000 — 64.9	993,000 — 16.5
Ship. 5-2 to 5-9	138,000 — 20.2	366,000 — 42.5	121,000 — 13.6	126,000 — 16.0	87,000	838,000 + 38.7
Stocks, May 9	3,284,000 + 3.6	2,706,000 + 3.7	292,000 + 11.4	205,000 — 5.1	475,000 — 13.5	6,962,000 + 2.3
Ratio Sales to Prod.	55.0%	79.0%	80.1%	109.6%	669.2%	84.4%
GAS OIL—Gallons						
Stocks, May 2	7,912,000	43,596,000	2,464,000	3,984,000	8,994,000	66,950,000
Prod. 5-2 to 5-9	1,832,000 + 72.5	2,247,000 — 15.2	752,000 — 61.1	612,000 + 28.6	2,023,000 — 12.9	7,466,000 — 11.6
Ship. 5-2 to 5-9	1,334,000 + 19.5	2,938,000 + 8.3	837,000 — 36.5	—152,000	2,244,000 — 10.7	7,201,000 — 19.3
Stocks, May 9	8,410,000 + 6.3	42,905,000 — 1.6	2,379,000 — 3.4	4,748,000 + 19.2	8,773,000 — 2.5	67,215,000 + 0.3
Ratio Sales to Prod.	72.8%	130.8%	111.3%	.....	110.9%	96.5%
FUEL OIL—Gallons						
Stocks, May 2	17,578,000	37,922,000	68,561,000	*13,602,000	26,371,000	164,034,000
Prod. 5-2 to 5-9	5,329,000 — 2.3	6,777,000 — 1.4	8,710,000 + 11.4	6,698,000 + 64.9	4,884,000 — 13.2	32,398,000 + 8.6
Ship. 5-2 to 5-9	4,536,000 — 12.8	6,345,000 + 64.5	9,111,000 + 20.6	5,741,000 — 4.7	6,536,000 + 39.7	32,269,000 +20.6
Stocks, May 9	18,371,000 + 4.5	38,354,000 + 1.1	68,160,000 — 0.6	14,559,000 + 7.0	24,719,000 — 6.3	164,163,000 +0.07
Ratio Sales to Prod.	85.1%	93.6%	104.6%	85.7%	133.8%	99.6%

Gasoline Produced by Various Methods, Week Ended May 9

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	6,742,000	59.9	12,629,000	66.7	7,283,000	73.3	4,224,000	90.4	1,760,000	33.4	32,638,000	65.2
Cracked	3,988,000	35.4	5,196,000	27.4	1,878,000	18.9	269,000	5.8	2,712,000	51.5	14,043,000	28.0
Natural	522,000	4.7	1,106,000	5.9	775,000	7.8	178,000	3.8	796,000	15.1	3,377,000	6.8
Total	11,252,000		18,931,000		9,936,000		4,671,000		5,268,000		50,058,000	

+ or — columns are % change over previous week.

*Revised.

Gasoline Stocks Again Rise in Mid-Continent

Staff Special—By Telegraph
TULSA, May 13

GASOLINE stocks at Mid-Continent refineries that report statistics of their operations weekly to NATIONAL PETROLEUM NEWS, increased 6,600,000 gallons in the week ended May 9 because of larger production and smaller shipments.

Crude oil runs were increased a daily average of 2000 barrels for the region because runs were increased in North and West Texas. Other districts reduced runs.

Gasoline production was 2,000,000 gallons more than in the week ended May 2. Gasoline shipments fell 2,000,000 gallons. No district drew on stocks. Shipments increased only in Kansas. There stocks rose only 67,000 gallons.

Kerosene production was increased 400,000 gallons. Shipments were 200,000 gallons more than in the preced-

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended May 9. Change in stocks figures from April 11.

GASOLINE

	Gallons
Production	205,688,000
Shipments	194,200,000
Net change in stocks	+11,488,000
Ratio sales to production	94.4%

KEROSENE

	Gallons
Production	29,290,000
Shipments	+26,357,000
Net change in stocks	2,933,000
Ratio sales to production	90.0%

STOVE DISTILLATE

	Gallons
Production	4,860,000
Shipments	4,279,000
Net change in stocks	+581,000
Ratio sales to production	88.0%

GAS OIL

	Gallons
Production	32,556,000
Shipments	28,879,000
Net change in stocks	+3,677,000
Ratio sales to production	88.7%

FUEL OIL

	Gallons
Production	132,229,000
Shipments	116,640,000
Net change in stocks	+15,589,000
Ratio sales to production	88.2%

ing week but stocks increased 1,000,000 gallons.

Distillate production was lower and shipments were higher but not high enough to reduce stocks.

Gas oil production and shipments were lower and stocks increased 200,000 gallons.

Fuel oil production was 2,500,000 gallons more with shipments 4,000,000 gallons more. Stocks increased only 29,000 gallons.

Doherty to Build Skyscrapers

NEW YORK, May 8.—With New York oil companies moving about recently into new and larger space, notably The Texas Co. and the Tide Water Oil Co., comes the announcement from 60 Wall St., which is the headquarters of Henry L. Doherty & Co. and the Cities Service Oil Co., that it will build a series of skyscrapers in the financial district here.

The first unit to be built will be a 63-story structure on the eastern portion of the block bounded by Pearl, William, Pine and Cedar Sts. Cost is estimated at $15,000,000. Building will begin at once.

Altogether the Doherty and Cities Service interests control about four acres of ground space in the financial district. The second unit of the skyscraper series will be erected within the next three years on Wall and Pine streets. The third building will front the northern section of Battery Park.

The westerly section of the skyscraper now under way at Pine, Pearl and Cedar streets is to be completed by May, 1931. The easterly portion will follow as soon as existing leases expire and will be ready for occupancy by May, 1932.

Among the new features planned for the building are double-deck elevators which will take on and discharge passengers of two floors at the same time. A tower, 30 floors in height, will top the new building. The top floors of that tower will be reserved for the personal use of Henry L. Doherty.

Chic Sale to Broadcast for Pennzoil

OIL CITY, Pa.—Chic Sale, noted for his rural impersonations on the stage and for his literary effort, "The Specialist," has been engaged by the Pennzoil Co. for a series of 26 weekly radio broadcasts. The first program will be May 18 over a chain hookup of the Columbia Broadcasting Co.

Simerman Moved to St. Louis

ST. LOUIS—George A. Simerman, tank car lubricating oil salesman for the Texas-Pacific Coal & Oil Co., has been transferred from the St. Paul to the St. Louis office. He will move his family to St. Louis in June after school closes.

JOBBERS

ARE YOU LOOKING FOR EXCLUSIVE TERRITORIES TO ACT AS DISTRIBUTORS FOR A NEW SCIENTIFICALLY PREPARED UPPER MOTOR LUBRICANT?

DEL-JAY UN-A-VERS-OL is a scientifically prepared lubricant which when mixed with gasoline will give longer life to a motor, reduce Knocking, and Carbon to a minimum and increase the mileage of any car. No Gumming or Seizing. It prevents and cures sticky valves.

DEL-JAY UN-A-VERS-OL can be used for the following purposes. To run-in new or rebuilt motors—to relieve sticky valves—to lubricate clutches—for easy shifting of gears in winter time—for loosening tight or rusted nuts, bolts, screws, shackles, etc.,—for spraying springs—for softening and removing carbon—for oiling brake systems—for oiling ignition systems—for eliminating squeaks—for airplane motors—marine engines—for hard starting motors.

DEL-JAY UN-A-VERS-OL is guaranteed not to contain any injurious ingredients.

Here is a new scientifically prepared upper motor lubricant that will help you build goodwill, increase your present gallonage and get new customers.

Very generous discounts will be given to a few Jobbers who will help us increase our present distribution. These discounts will also apply to Foreign distributors.

Write for full particulars to

THE ALMO CORPORATION

391 High St.
Newark, N. J.
U. S. A.

DEL-JAY
TRADE MARK REG.
UN-A-VERS-OL

Cable Address: ALMOCO
Codes: Bentley & Lieber

THE
ALMO CORP.
391 High St.
Newark, N. J.
WE ARE INTERESTED
Name.....
Address.....
City..... State.....

Give every motorist the gas-performance he should have!...

Install SINCLAIR THREE-GAS SERVICE

In these days a motorist wants to buy gasoline where he can select it to fit his own engine's requirements, and his own driving habits.

Here is where Sinclair Dealers offer a real motoring improvement—*Three-Gas Service!* Here are three different gasolines—each one giving a different performance.

If a motorist likes a sporty, step-and-go gasoline that gets away like a rocket and gives brilliant performance—here's Sinclair Aircraft Gasoline. It is the *Ace* of high test gasolines because it is specially manufactured at Sinclair Refineries, meeting the requirements of the Federal Specifications Board for Aviation Gasoline—domestic grade—and gives sustained power. Due to its careful fractionation it is free from dissolved gases which cause gas locks, uneven distribution, galloping and engine balk.

If he wants a high compression gas that gives better low gear performance in traffic and stops knocks on the hill—he can choose Sinclair H-C Gasoline. It's *all* gasoline—nothing added!

And—if he prefers to pay three cents less per gallon—he can fill up with Sinclair Regular Gasoline and get economy and mileage in a gas that's full of eager power! The quality gasoline at a popular price!

Make your Stations *the Stations* where motorists can *choose* from three gasolines, with every assurance of fuel satisfaction. Try selling Sinclair Three-Gas Service!

SINCLAIR REFINING COMPANY, INC.
45 Nassau Street, New York
Atlanta Chicago Houston Kansas City

Refinery - Tank Wagon Markets

National Petroleum News

Gasolines Ease Off in All Districts Except the Atlantic Seaboard

CLEVELAND, May 13

REFINED oil markets were featureless from the standpoint of activity in the week ended May 10. Gasoline price trends were of a decidedly mixed nature. Prices for the majority of other commodities sought lower levels in practically all districts.

Retail markets for the most part were steady. No general advance or reduction was made in any of the Standard territories. Even local price revisions were not much in evidence. The Standard of Ohio territory was the only exception. Upward price changes outshone the reductions there.

Tank car markets for gasoline along the Atlantic seaboard stood out prominently against markets in other sections of the country. Prices in that area advanced 0.25 to 0.5 cent and spot buying from the jobbing trade improved materially under the stimulus of better weather conditions.

A 1-cent reduction in its tank car prices for gasoline made by the Standard Oil Co. of New York caused a temporary downward reaction in New England markets.

A number of soft spots developed in middle western gasoline markets and in sections along the Pacific Coast. In the Mid-Continent and Chicago districts U. S. Motor appeared at under 7 cents with spot market buying practically at a standstill. Distress lots of Pennsylvania gasoline were offered at under 8.25 cents and sellers reported considerable difficulty in getting shipping instructions from buyers.

Kerosene demand was disappointing, according to reports received from practically every refining district. Prices generally eased off 0.125 cent.

Both light and heavy fuel oils were rather sluggish and prices showed further recessions.

Export prices for Gulf Coastal lubricating oils advanced slightly but domestic tank car markets in all districts were quiet and prices turned easier.

Wax trading continued quiet but prices showed little change.

U. S. Motor Eases Off in Chicago

Staff Special

CHICAGO, May 10

THE inactive demand for gasolines, which had characterized the Chicago resale market for the previous two weeks, again was much in evidence last week, and spot gasoline prices were lower during the closing days of the week.

It had generally been admitted among the Chicago trade, toward the end of the previous week, that the immediate future of the gasoline market depended on the weather. Therefore this downward movement of spot prices was not unlooked for, in view of the rainy weather prevailing in many sections, and the fact that jobbers generally have had enough gasoline in storage to keep them from being active in the spot market.

A number of refiners, who sell mostly through their own service stations or on marginal contracts, reported their movement of gasoline was satisfactory through both channels.

Practically all of the gasoline business reported during the week was on a prompt shipment basis, with little interest now being taken in goods for shipment over the remainder of May. Early in the week, several marketers reported they were able to pick up occasional cars of full specification U. S. Motor in north Texas at 6.75 cents, f.o.b. Group 3 and by May 8 they reported this grade was offered rather freely at this figure. Some Oklahoma U. S. Motor also was reported moved for resale purposes at 6.75 cents.

Sales of U. S. Motor to jobbers generally were on a basis of 7 to 7.25 cents on and after May 8. Most of the Chicago marketers quoted 7 or 7.125 cents. Several Oklahoma and Chicago district refiners reported sales at 7.25 cents, Group 3 basis. Other refiners quoted Motor at 7.375 to 7.50 cents, but reported only occasional spot sales at these figures.

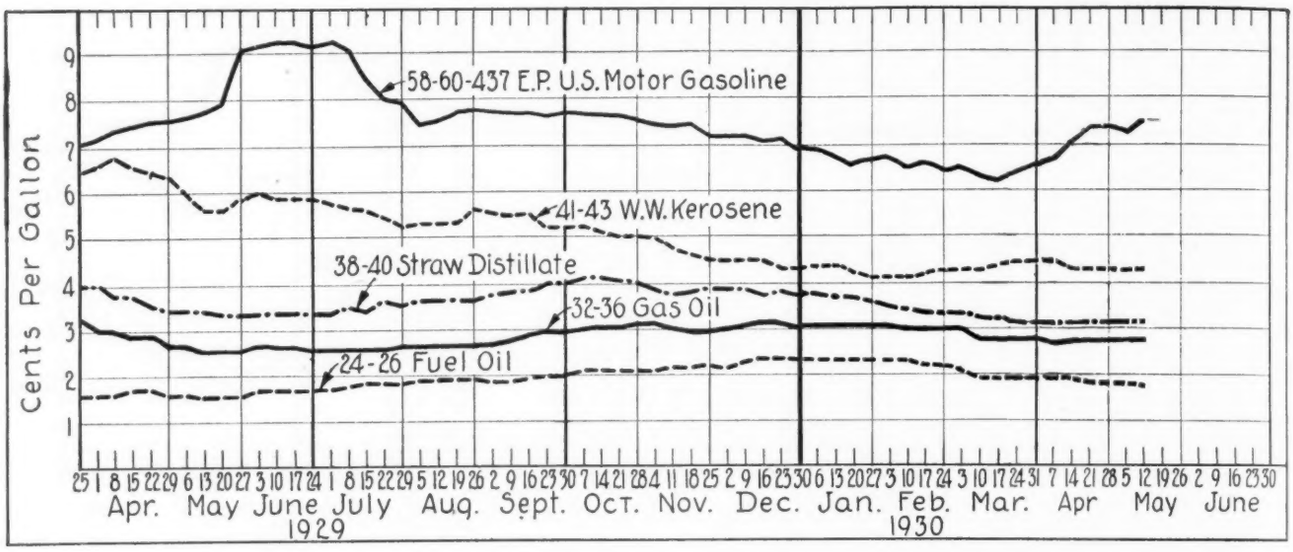
Some sales of off specification gasoline and some U. S. Motor which was sold while in transit, were reported at under 7 cents. It was reported that a considerable quantity of 60-62, 400 e.p. gasoline was moved out of north Texas at around 7.125 to 7.25 cents. Most of it was ordered shipped to the first buyer and resold while in transit.

It was reported late in the week, that U. S. Motor gasoline was being offered by two or three marketers for shipment from a central state refinery into points in Indiana and Illinois, at around 6.90 to 7 cents, f.o.b. Group 3. The amount of gasoline available at these prices was said to be about 140 cars.

Conflicting reports were heard on kerosenes, although it was generally admitted that prices were about 0.125 cent lower. A number of sellers said their demand was light and they were offering 41-43 w.w. as low as 4.125 cents. Other sellers said they still were enjoying a fairly good demand from some parts of Indiana and from the more northern states. They continued to report sales as high as 4.375 cents.

The gas oil and distillate markets were practically at a standstill during the week. The season for furnace oils

Current Prices of Principal Mid-Continent Refined Products


58-60-437 E.P. U.S. Motor Gasoline
41-43 W.W. Kerosene
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Cents Per Gallon
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr May June
1929
1930

Prices shown are in Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

is now over and these products have lapsed into their off season dullness. Prices generally, however, were unchanged.

Demand for fuel oils, both from home burner owners and from industrial concerns, was quiet. Several sellers of industrial fuel oils reported that their customers were running their plants considerably below capacity and were not much interested in the market at the present time.

Occasional periods of precipitation are likely over the Standard of Indiana territory next week, says the Chicago weather bureau. Temperatures generally will remain near normal.

Ohio Producers to Talk Prices

LOGAN, O., May 13.—The semi-annual meeting of the Southeastern Ohio Oil and Gas Producers Association will be held May 21 at Logan. The present price of Pennsylvania grade crude will be the most important subject for discussion, according to W. L. Franks, secretary.

Crude in the Macksburg, O., district in which these producers operate is now $2.20 per barrel, or about 5 cents per gallon to the producer, the lowest in years, Mr. Franks says.

Alabama Oil Men Organize

BIRMINGHAM, Ala., May 9.—Oil men of Alabama have organized the Alabama Oil Men's Association. Headquarters are in the Watts Bldg., Birmingham.

Officers are: J. Gregory Johnston, president; J. M. McCown and S. H. Arnold, vice presidents; U. M. Bachtel, secretary and treasurer; and S. C. Klein, executive secretary.

New Code List Issued for Northwest

MINNEAPOLIS, May 3.—The code committee for Minnesota and North Dakota, E. E. Hadlick, chairman, has issued a new list of signers of the code with latest interpretations.

Signs for Stations Signing Code

NEW YORK, May 3.—Displaying of signs at service stations to show they are operating under the code of ethics was approved by members of the Northeastern Regional Code Committee. The Connecticut state code committee sponsored the proposal. The northeastern committee added that displaying of the signs would tend to influence marketers to sign the code.

Lube Movement Normal From Gulf

HOUSTON, May 12.—Strength in the Gulf Coastal lubricant prices for export cargo shipments was not carried into domestic selling schedules which are normally somewhat higher because of the smaller movements involved and the tank car nature of loadings. Export prices average about one-half cent higher per gallon than recently, although individual grades show minor variance. Spot shipments in tank cars to jobbers continue to show normal spring movement at unchanged prices.

Shipments From Southern California

LOS ANGELES, May 8.—Shipments of bulk petroleum from Southern California ports for week ended May 3 were as follows:

Destination	Crude	Gasoline	Diesel	Kerosene	Fuel	Gas-Oil	Total
Pacific For.	8,962	7,327	140,225	.....	526,356	.....	682,870
Atlantic Dom.	.....	312,736	.....	5,672	.....	.....	318,408
Atlantic For.	.....	255,898	.....	.....	.....	.....	255,898

Prices 10 Years Ago
May 10, 1920

	Oklahoma	Penna.
58-60 U. S. Motor	23.00c	25.00c
80-84 Natural	18.00–19.00c	.....
Kerosene (41-43 Okla.; 47 w. w. Pa.)	11.25–11.50c	15.50–15.75c
Fuel Oil (24-26 Okla.; 38-40 Pa.)	$3.25–$3.50	13.75c
Crude (Okla. 35-35.9)	$3.50	$6.10
Chicago tank wagon		25.00c

Prices A Year Ago
May 13, 1929

	Oklahoma	Penna.
58-60 U. S. Motor	7.7602c	9.50–9.75c
Grade A Natural	7.25–7.50c	.....
Kerosene (Okla. 41-43; Pa., 47 w. w.)	5.50–5.75c	8.00–8.75c
Fuel Oil (Okla. 24-26; Pa. 36-40)	$0.625–$0.675	5.375–5.75c
Crude (Okla. 35-35.9)	$1.17	$4.00
Chicago tank wagon		14.00c

Mid-Continent Refinery Markets

Soft Spots Develop in Gasoline Markets

Staff Special
TULSA, May 10

THE gasoline market developed some easiness in a few spots in the Mid-Continent the week of May 5 to 10, due primarily to adverse weather conditions in much of the middle west. In the majority of cases, however, prices were well maintained although generally speaking spot demand was comparatively light.

Kansas refiners in the course of the week encountered increased competition, and at the same time they continued to receive reports of inclement weather in much of their normal marketing territory. For the most part, however, prices were unchanged in that district.

Oklahoma refiners continued to quote a wide range of prices. The majority of refiners had their quotations on 58-60 U. S. Motor well in line at 7.25 to 7.50 cents, but as business showed no signs of increasing as the week progressed, a few of the smaller refiners made some price concessions provided immediate shipping instructions could be furnished by the buyer.

Several marketers reported about the middle of the week that they had more gasoline offered to them at 6.75 cents than they could buy, but a check indicated that this gasoline was offered from only one source and that it was a cracked product and did not meet U. S. Motor specifications although the benzol equivalent made it a reasonably good anti-knock product. The refiner making this gasoline said May 10 that he had had some difficulty moving the product.

Another report which apparently had considerable truth back of it was to the effect that a refiner in the Mid-Continent but outside of Oklahoma, sold a considerable quantity of gasoline in the Chicago district soon after the crude advances a month ago, telling the resale buyers at the time that they had bought the gasoline and would be expected to take out their purchases. The gasoline does not quite meet U. S. Motor specifications, but the purchases were made at 6.75 and 7 cents.

With a letup in demand the resale buyers found difficulty in disposing of the gasoline, but the refiner did not let that disturb him. He continued to ship the gasoline to the resale buyers, regardless of whether or not they had furnished definite shipping instructions, with the result several marketers found themselves long on gasoline which was costing them demurrage. The result in many instances was a sale regardless of cost or profit.

Some of the easiness which developed in north Texas undoubtedly can be attributed to the comparatively low tank wagon prices prevailing. No advances were made in that territory when other territories advanced early in April.

As an example of the situation at present, the sales manager of a sizeable Independent company said that his company's budget showed that the average state-wide tank wagon price was slightly over 11 cents a gallon at present, and that the average freight was about 2.50 cents a gallon.

Deducting the freight and the 4-cent tax, the company was obtaining about 5.25 cents a gallon f.o.b. refinery for the gasoline it sold through its own outlets. When the agent's commission, etc., were taken off, the netback was just about 2 cents a gallon.

It is little wonder, therefore, that some of the north Texas refiners preferred to sell in Standard of Indiana territory in competition with other districts, even though they had to accept lower prices. At least they did not have to pay the freight on those sales, and accordingly obtained a better netback at the refinery.

The opinion was general that the weather was the deciding factor at present. Jobbers filled their storage sufficiently after the crude advances to remain out of the market to a large extent in the face of slow consumption. A break for the better in the weather the next week or 10 days was expected to stimulate buying to the point where refiners would again be taking gasoline out of storage.

Natural gasolines remained quiet throughout the week with some indication the lower grades would break down from the grades A and AA as far as price was concerned. One company which had been buying all grades withdrew from the market late in the week, with the result the lower grades lost some ground, but another company immediately entered the market for grade AA. It made no effort to solicit business, being content to take the gasoline as it was offered at 6.50 cents a gallon. Manufacturers attributed the slowness to the easier tone in the refined gasoline market. Several said they had had refiner accounts to hold up shipping instruction the past week.

Kerosenes were lower in price in virtually all districts. Demand was reported comparatively light. Kansas refiners who earlier in the spring enjoyed an exceptionally good demand reported rains had slowed up buying considerably. Oklahoma refiners made price reductions as a result of a slower market, although a few reported business had been sufficient to keep them from adding materially to stocks.

Gas oils and distillates were virtually out of the picture at the present time, with prices generally unchanged.

Fuel oils were sluggish in all districts with price reduction made in the course of the week on several grades. Not until gasoline demand is sufficiently heavy to warrant increased cracking operations do fuel oil sellers expect any improvement in the market.

Neutral oils were in active demand, several manufacturers reported, but prices were unchanged. Bright stocks were inactive, all makers reported, sales being so few on the spot market that quotations had to be accepted as a basis for determining prices. Wax was dull at unchanged prices.

Venezuelan Crude Quoted At $0.90 Per Barrel

NEW YORK, May 10.—Suppliers of Venezuela crude oil had higher ideas of prices May 10, compared with their quotations of two weeks ago. Generally, the market was said to be about $0.90 per barrel although there were no spot sales reported on which to base accurate opinions of the market. This price compares with $0.75 to $0.85 per barrel, the trade's opinions April 19. These prices were for oil f.o.b. deepwater in the Lake Maracaibo region.

According to most of the trade there are no anxious sellers of Venezuela crude. The oil is in the hands of large sellers whose contract shipments are heavy.

Richfield Moves Into South

NEW YORK, May 10.—Richfield Oil Co. has contracted with the General American Tank Storage & Terminal Co. at New Orleans for storage space for gasoline to be distributed in southern and southeastern states. One cargo of gasoline has already arrived at New Orleans.

Shell Buys Idaho Marketer

SAN FRANCISCO, May 8.—Shell Oil Co. of California has bought the Southern Idaho Oil Co. which has 18 distributing stations in southern Idaho.

Comparative Prices of 58-60 U. S. Motor Gasoline, 437 E. P., Group 3 and Point of Origin, to Jobbers Only

In Effect May 12

	Price F.O.B. Group 3		*Price F.O.B. Point of Origin*		*If for Particular Destination*
Oklahoma	7.2083	(Wt. Avg.)	7.2083	(Wt. Avg.)	.....
Kansas	7.25	.....	.....	.....	S. O. Neb. & Indiana Territory, etc.
Kansas	.....	.....	7.6875	(Wt. Avg.)	Kansas only.
North Texas	6.875–7.25	.....	6.875–7.375	.....	.....
West Texas	7.25	.....	7.25	.....	.....
Louisiana-Arkansas	7.25–7.50	.....	.....	.....	Michigan, Ohio and Indiana.
Louisiana-Arkansas	.....	.....	7.75	.....	State or differential haul.
Indiana-Illinois	7.25–7.50	.....	.....*	.....	S. O. Indiana territory except Detroit and vicinity. For Ohio on delivered basis only.

*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rates; no prices F.O.B. point of origin can be given.

Chicago Resale Market

CHICAGO, May 10

SPOT demand continued inactive in the Chicago market last week and gasoline prices were lower during the closing days. On and after May 8, marketers reported sales of U. S. Motor at 7 to 7.125 cents, while some Oklahoma and Chicago district refiners moved this gasoline at 7.25 cents. Other refiners continued to quote 7.375 to 7.50 cents, but reported only occasional sales at these figures. It was reported that U. S. Motor gasoline was offered by two or three marketers, for shipment from central states refinery into points in Indiana and Illinois, at around 6.90 to 7 cents, f.o.b. Group 3.

Following prices represent majority of sales made on Group 3 freight basis, although shipments may originate in other refining districts such as north and west Texas, Arkansas, Louisiana, Indiana, Illinois, Kentucky, etc.

	Prices May 12	**Prices May 5**	**Prices Apr. 28**
58-60 U. S. Motor, 437 e.p.	7.00 – 7.25	7.125– 7.375	7.125– 7.375
60-62 437 e.p. gasoline	7.125– 7.375	7.25 – 7.50	7.25 – 7.50
60-62 400 e.p. gasoline	7.375– 7.75	7.50 – 7.75	7.50 – 7.75
64-66 375 e.p. gasoline	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
68-70 350-360 e.p. gasoline	8.00 – 8.25	8.00 – 8.25	8.00 – 8.25
*Domestic Aviation Gasoline	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
41-43 w.w. kerosene	4.125– 4.375	4.25 – 4.50	4.25 – 4.50
42-44 w.w. kerosene	4.50 – 4.75	4.625– 4.75	4.625– 4.75
38-40 straw distillate	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
32-36 ordinary dark gas oil	2.375– 2.625	2.375– 2.625	2.375– 2.625
32-36 dark zero gas oil	2.50 – 2.75	2.50 – 2.75	2.50 – 2.75
32-36 straw zero gas oil	2.625– 2.75	2.625– 2.75	2.625– 2.75
28-30 zero fuel oil (per bbl.)	$0.90 –$0.95	$0.90 –$0.95	$0.925–$0.95
28-30 fuel oil (per bbl.)	$0.90 –$0.95	$0.90 –$0.95	$0.90 –$0.95
24-26 fuel oil (per bbl.)	$0.75 –$0.80	$0.75 –$0.80	$0.75 –$0.80
18-22 fuel oil, low sulfur (per bbl.)	$0.60 –$0.65	$0.60 –$0.65	$0.625–$0.675
18-22 fuel oil, high sulfur zero (per bbl.)	$0.60 –$0.65	$0.60 –$0.65	$0.60 –$0.65

*Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F.; 50% recovery at 221°.; 90% at 311°; 96% at 347°; end point 374° F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

Weighted Average Prices

OKLAHOMA

	May 12		**May 5**		**Apr. 28**	
	No. of cars	**Price**	**No. of cars**	**Price**	**No. of cars**	**Price**
58-60 U. S. Motor, 437 e.p.	6	7.2083	9	7.3611	6	7.2500
60-62 437 e.p. gasoline	4	7.5000	No sales reported		4	7.4062
60-62 400 e.p. gasoline	No sales reported		1	7.7500	No sales reported	
64-66 375 e.p. gasoline	No sales reported		No sales reported		No sales reported	
*58-60 437 e.p. gasoline	..	7.00–7.50	..	7.00–7.50	..	7.125–7.50

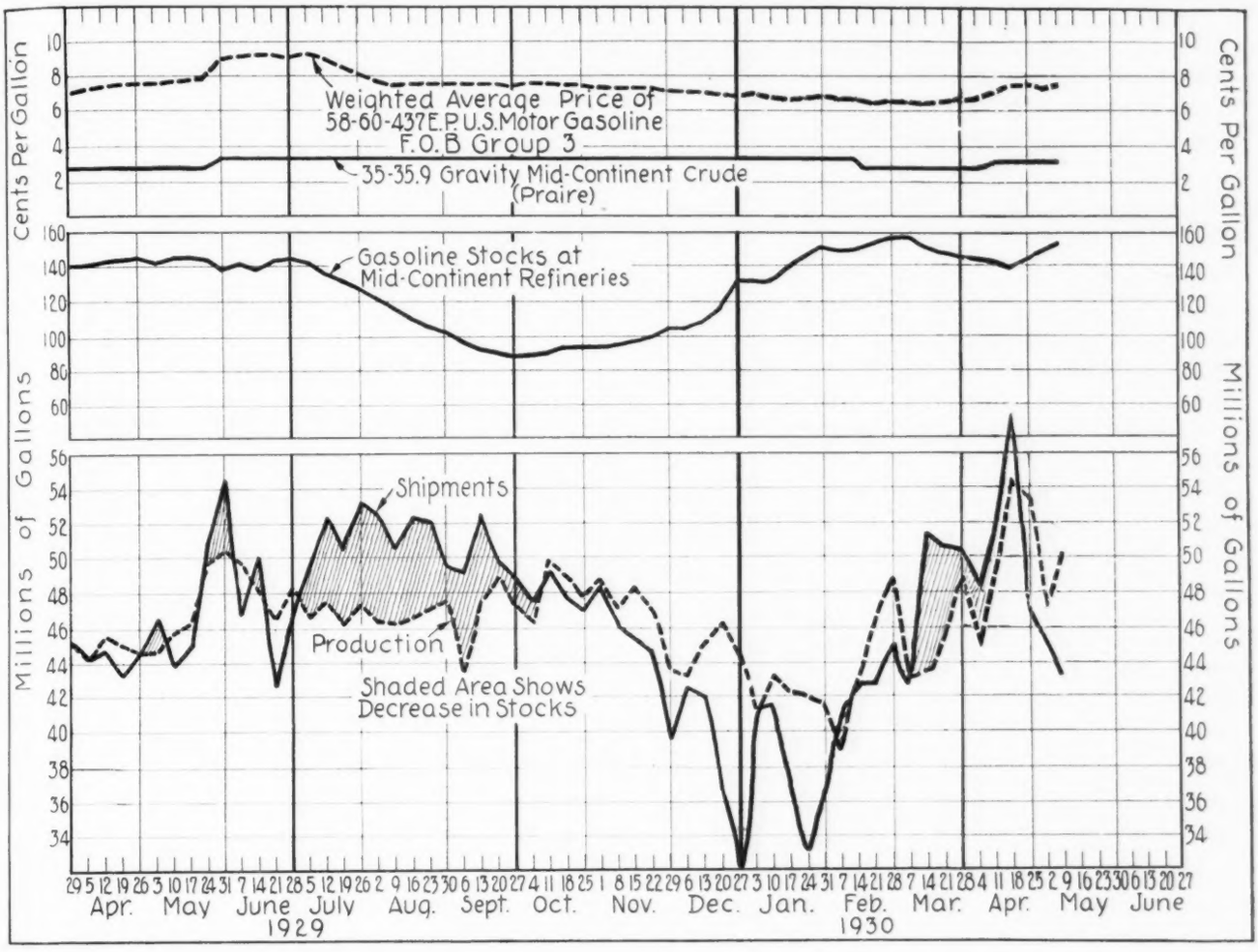
KANSAS

	May 12		**May 5**		**Apr. 28**	
	No. of cars	**Price**	**No. of cars**	**Price**	**No. of Cars**	**Price**
58-60 U. S. Motor, 437 e.p.	2	7.6875	No sales reported		1	7.7500

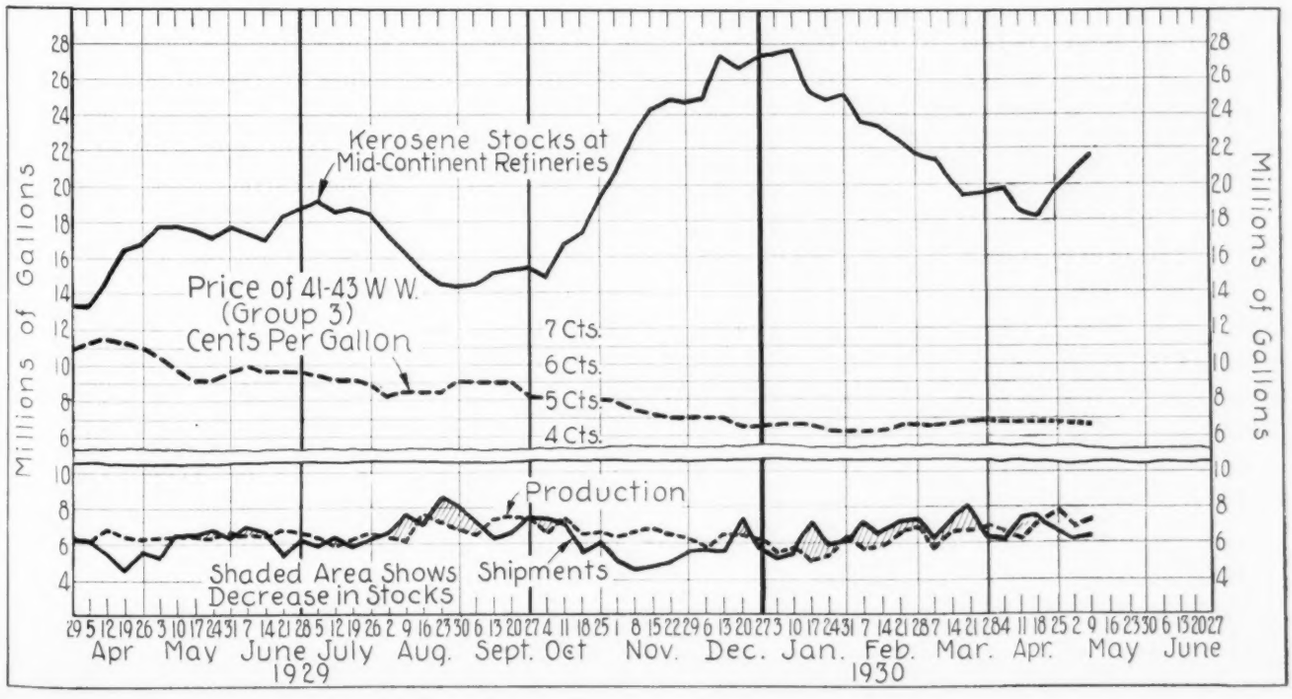
*Full U. S. Motor specifications not guaranteed.

Barometer of Mid-Continent Refinery Market—Week Ending May 9

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Cents Per Gallon
Weighted Average Price of 58-60-437 E.P.U.S. Motor Gasoline F.O.B Group 3
35-35.9 Gravity Mid-Continent Crude (Praire)
Gasoline Stocks at Mid-Continent Refineries
Millions of Gallons
Shipments
Production
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1929
1930

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 114



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, except where $ is shown. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices May 12	Prices May 5	Prices Apr. 28
48-50 450 e.p. naphtha...	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
50-52 450 e.p. naphtha...	7.125– 7.25	7.125– 7.25	7.125– 7.25
56-58 450 e.p. gasoline...	7.00 – 7.25	7.00 – 7.25	7.125– 7.25
58-60 450 e.p. gasoline...	7.00 – 7.25	7.00 – 7.25	7.25
64-66 390 e.p. gasoline...	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
68-70 350-360 e.p. gasoline	8.75	8.75	8.75
‡Domestic Aviation Gasoline.....	9.00 –10.00	9.50 –10.50	9.50 –10.50

‡Prices based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F.; 50% rec. at 221°; 90% at 311°; 96% at 347°; end point, 374°F. Fighting grade in some instances sells at a premium over domestic aviation grade.

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

52-54 Naphtha.....	7.50 – 7.75	7.75	7.25 – 7.375
54-56 Naphtha.....	7.75 – 8.00	7.75 – 8.00	7.25 – 7.50
58-60 U.S. Motor 437 e.p.	8.25 – 8.75	8.25 – 8.75	8.00 – 8.50
60-62 400-410 e.p. gasoline	8.50 – 9.00	8.50 – 9.00	8.25 – 8.50
64-66 390 e.p. gasoline...	8.75 – 9.50	8.75 – 9.50	8.25 – 8.75
68-70 350-360 e.p.....	9.25 – 9.75	9.25 – 9.75	8.625– 9.50

OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)

U. S. Motor Gasoline			
Ohio, delivery at any point.....	10.50	10.50	10.50

KANSAS (F. o. b. refinery Kansas destination)

60-62 437 e.p. gasoline...	7.875	7.875	7.875
60-62 400 e.p. gasoline...	8.00	8.00	8.00
64-66 375 e.p. gasoline...	8.25	8.25	8.25

NORTH TEXAS (F. o. b. North Texas refineries)

56-58 450 e.p. gasoline...	6.75	6.75 – 7.00	7.00
58-60 450 e.p. gasoline...	6.75	6.75 – 7.00	7.00
58-60 U.S. Motor 437 e.p.	6.875– 7.375	7.125– 7.375	**7.125– 7.375
60-62 400 e.p. gasoline...	7.50 – 7.75	7.50 – 7.75	7.50 – 7.75
64-66 390 e.p. gasoline...	7.875– 8.00	7.875– 8.00	7.875– 8.00
64-66 375 e.p. gasoline...	8.00 – 8.25	8.00 – 8.25	8.00 – 8.25
68-70 350-360 e.p. gasoline	8.375– 8.50	8.375– 8.50	8.25 – 8.375

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment)

50-52 naphtha.....	6.75	7.00	7.00
58-60 437 e.p. gasoline...	6.75 – 7.00	7.25	7.25
58-60 U.S. Motor 437 e.p. gasoline.....	7.25	7.50	7.50

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

58-60 U.S. Motor 437 e. p.	7.75	7.75	7.75

ARKANSAS (Ark., N. La. and Miss. destination)

58-60 U.S. Motor 437 e.p.	7.75	7.75	7.75

CALIFORNIA (3c tax to be added to California gasoline prices if used in state.)

54-58 U.S. Motor 437 e.p.	8.00 – 9.50	9.50 –10.50	8.50 – 9.50
54-58 U.S. Motor, for outside state shipment....	7.50 – 8.75	8.00 – 9.00	7.25 – 8.25
58-61 375-400 e.p. gasoline	9.00 –11.00	10.50 –12.00	9.50 –10.50
42-45 Engine Distillate 445-480 e.p.....	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA (F. o. b. Oklahoma refineries)

Grade AA, 80-87.9, 90% Recovery.....	6.50	6.50 – 6.625	6.50
Grade A, 72-79.9, 90% Recovery.....	6.50	6.50	6.625
Grade BB, 84-92, 85% Recovery.....	6.25	6.50	6.50
Grade B, 76-83.9, 85% Recovery.....	6.50	6.50	6.50
Grade C, 80-92, 78% Recovery.....	6.25	6.50	6.50

NORTH TEXAS (F. o. b. Breckenridge)

Grade AA, 80-87.9, 90% Recovery.....	6.50	6.50	6.50
Grade A, 72-79.9, 90% Recovery.....	6.50	6.50	6.625
Grade BB, 84-92, 85% Recovery.....	6.25	6.50	6.50
Grade B, 76-83.9, 85% Recovery.....	6.50	6.50	6.50
Grade C, 80-92, 78% Recovery.....	6.25	6.50	6.50

NORTH LOUISIANA (F. o. b. Monroe District)

	Prices May 12	Prices May 5	Prices Apr. 28
Grade AA.....	†7.00	†7.00	†7.00
Grade BB.....	†6.875	†6.875	†6.875
Grade C.....	†6.875	†6.875	†6.875

CALIFORNIA (F. o. b. California refineries)

75-85, 375-390 e.p. blend	7.25 – 8.00	7.25 – 8.00	7.25 – 8.00

BURNING OILS

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

45 w.w. kerosene.....	5.375– 5.75	5.50 – 5.875	5.625– 5.875
46 w.w. kerosene.....	5.75 – 6.00	5.75 – 6.25	5.875– 6.25
47 w.w. kerosene.....	6.125– 6.375	6.125– 6.375	6.25 – 6.50
300 mineral seal.....	6.50 – 7.00	6.50 – 7.00	6.75 – 7.00

OKLAHOMA (F. o. b. Oklahoma refineries)

41-43 w.w. kerosene.....	4.25	4.25 – 4.375	4.25 – 4.50
42-44 w.w. kerosene.....	4.75	4.75	4.75 – 5.00

KANSAS (F. o. b. refinery Kansas destination)

41-43 w.w. kerosene.....	4.75	4.875– 5.00	4.875– 5.00
42-44 w.w. kerosene.....	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25

NORTH TEXAS (F. o. b. North Texas refineries)

40-42 w.w. kerosene.....	4.00	4.125	4.125
41-43 w.w. kerosene.....	4.00 – 4.25	4.25	4.25

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

41-43 w.w. kerosene.....	5.00	5.00	5.00
42-44 w.w. kerosene.....	5.25	5.25	5.25

ARKANSAS (Ark., N. La. and Miss. destination)

42-44 w.w. kerosene.....	5.25	5.25	5.25

CALIFORNIA (F. o. b. California refineries)

38-40 w.w. kerosene.....	4.00 – 5.00	4.00 – 5.00	4.00 – 5.00

NEUTRAL OIL

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

Vis.	(Viscosity at 70° F.)		
200 No. 3 Assoc. Filt.....	25.00 –26.00	25.00 –26.00	25.00 –26.00
180 No. 3 Assoc. Filt.....	21.00 –22.00	21.00 –22.00	21.00 –22.00
150 No. 3 Assoc. Filt.....	15.25 –16.50	15.25 –16.50	15.50 –16.50
	(Non Viscous)		
34 Grav. 330-340 Flash..	6.50 – 7.00	7.00 – 7.50	7.00 – 7.50

****OKLAHOMA** (F. o. b. Oklahoma refineries)

Vis.	Color	(Viscosity at 100° F.)		
100—No. 2.....		6.00 – 7.50	6.00 – 7.50	6.00 – 7.50
150—No. 3.....		8.00 – 9.00	8.00 – 9.00	8.00 – 9.00
150—No. 4.....		7.00 – 8.50	7.00 – 8.50	7.00 – 8.50
180—No. 3.....		9.00 –10.50	9.00 –10.50	9.00 –10.50
180—No. 4.....		9.00 –10.00	9.00 –10.00	9.00 –10.00
180—No. 5.....		8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
200—No. 3.....		12.00	12.00	12.00
200—No. 4.....		10.00 –11.50	10.00 –11.50	10.00 –11.50
200—No. 5.....		10.50 –11.00	10.50 –11.00	10.50 –11.00
220—No. 3.....		12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4.....		12.00 –12.50	12.00 –12.50	12.00 –12.50
220—No. 5.....		11.00 –12.00	11.00 –12.00	11.00 –12.00
240—No. 3.....		13.50 –15.50	13.50 –15.50	13.50 –15.50
240—No. 4.....		12.50 –14.50	12.50 –14.50	12.50 –14.50
240—No. 5.....		12.00 –14.00	12.00 –14.00	12.00 –14.00
280—No. 3.....		17.00 –18.00	17.00 –18.00	17.00 –18.00
280—No. 4.....		15.00 –17.00	15.00 –17.00	15.00 –17.00
280—No. 5.....		14.00 –15.50	14.00 –15.50	14.00 –15.50

†Prices nominal ††Only one refiner quoting *Quotations only **Represents Both Sales and Quotations.

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, except where $ is shown. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL (F. o. b. Gulf Coastal refineries)

Vis.	Color	Prices May 12	Prices May 5	Prices Apr. 28
		(Viscosity at 100° F., pour test 0)		
100	No. 2 Pale	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00
200	No. 3 Pale	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
300	No. 3 Pale	10.75 –11.00	10.75 –11.00	10.75 –11.00
500	No. 3½ Pale	12.00 –12.25	12.00 –12.25	12.00 –12.25
750	No. 4 Pale	13.50 –13.75	13.50 –13.75	13.50 –13.75
1200	No. 5 Pale	16.00 –16.50	16.00 –16.50	16.00 –16.50
200	No. 5½ Red Oil	8.75 – 9.00	8.75 – 9.00	8.75 – 9.00
300	No. 5½ Red Oil	10.00 –10.25	10.00 –10.25	10.00 –10.25
500	No. 6 Red Oil	11.25 –11.50	11.25 –11.50	11.25 –11.50
750	No. 6 Red Oil	12.75 –13.00	12.75 –13.00	12.75 –13.00
1200	No. 5-6 Red Oil	15.00 –15.25	15.00 –15.25	15.00 –15.25

‡CALIFORNIA (F. o. b. California refineries)

Vis.	Color	(Viscosity at 100° F.)		
100	No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200	No. 3	11.50	11.50	11.50
300	No. 3	13.00	13.00	13.00
450	No. 3	15.50	15.50	15.50
550	No. 3	16.50	16.50	16.50
600	No. 3	17.00	17.00	17.00
200	No. 5	11.00	11.00	11.00
300	No. 5	12.00	12.00	12.00
400	No. 5	14.00	14.00	14.00
500	No. 5	15.00	15.00	15.00
600	No. 5	16.00	16.00	16.00
700	No. 7	18.00	18.00	18.00

‡Neutral oils not manufactured commercially in California.

CYLINDER STOCKS

OKLAHOMA (F. o. b. Oklahoma refineries)

190-200 Vis. D at 210° Brt. St.	41.00 –42.00	41.00 –42.00	41.00 –42.00
150-160 Vis. D at 210° Brt. St., 15-20 cold test	37.00	37.00	37.00
150-160 Vis. D Brt. Stock, 25-45 cold test	36.00 –36.50	36.00 –36.50	36.00 –36.50
150-160 Vis. E 210° Brt. St.	34.00 –35.00	34.00 –35.00	34.00 –35.00
600 St. Ref. Olive Green	9.00 –10.00	9.00 –10.00	9.00 –10.00
600 St. Ref. Dark Green	9.00	9.00	9.00
Black Oil	5.00	5.00	5.00

PENNSYLVANIA (F. o. b. Western Penna. refineries) (A.S.T.M. Tests)

600 Steam Refined, filterable	21.00 –23.00	21.00 –23.00	23.50 –24.50
650 Steam Refined	28.00 –29.00	28.00 –30.00	29.00 –31.00
600 Flash	31.00 –33.00	31.00 –33.00	31.00 –33.00
630 Flash	35.00 –36.00	35.00 –36.50	35.00 –36.50
600 Warren E	28.50 –29.50	29.50 –30.00	29.50 –30.00
600 Oil City E	27.50 –28.50	29.00 –29.50	29.00 –29.50
600 D Filtered	34.00 –35.00	34.00 –35.00	34.00 –35.00
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	38.50 –40.00	39.00 –41.00	39.00 –41.00
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	38.00 –39.00	38.00 –40.00	38.00 –40.00

WAX

PENNSYLVANIA (Per pound, F. o. b. New York)

122-124 white crude scale, a.m.p.	2.50 – 2.625	2.50 – 2.625	2.60 – 2.625
124-126 white crude scale, a.m.p.	2.50 – 2.625	2.50 – 2.625	2.60 – 2.625

****OKLAHOMA** (Per pound in barrels; in a few instances, per pound in burlap bags; F. o. b. Oklahoma refineries)

124-126 White Crude Scale, a.m.p.	2.375	2.375	2.375

DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	4.00 – 4.375	4.00 – 4.375	4.00 – 4.375
30-34 fuel oil	3.75 – 4.00	3.75 – 4.00	4.00 – 4.125
28-32 fuel oil	3.75 – 4.00	3.75 – 4.00	4.00 – 4.125

†Prices nominal ††Only one refiner quoting *Quotations only

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices May 12	Prices May 5	Prices Apr. 28
38-40 straw distillate	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
36-38 straw distillate	2.875	2.875	2.875
32-36 straw gas oil	2.50 – 2.75	2.50 – 2.75	2.50 – 2.75
32-36 straw gas oil zero	2.75 – 3.00	3.00	3.00
32-36 dark gas oil	2.25 – 2.50	2.375– 2.50	2.375– 2.50
32-36 dark gas oil zero	2.50 – 2.75	2.50 – 2.75	2.50 – 2.75
28-30 zero fuel oil (per bbl.)	$0.90 – 0.95	$0.90 – 0.95	$0.90 – 0.95
28-30 fuel oil (per bbl.)	$0.85 – 0.90	$0.875– 0.90	$0.875– 0.90
26-28 fuel oil (per bbl.)	$0.80 – 0.85	$0.825– 0.875	$0.825– 0.875
24-26 fuel oil (per bbl.)	$0.75 – 0.80	$0.775– 0.80	$0.775– 0.80
22-26 fuel oil (per bbl.)	$0.65 – 0.75	$0.65 – 0.75	$0.70 – 0.75
18-22 fuel oil (per bbl.)	$0.575– 0.625	$0.60 – 0.65	$0.60 – 0.65
16-20 fuel oil (per bbl.)	$0.55 – 0.60	$0.55 – 0.60	$0.55 – 0.60
14-16 fuel oil (per bbl.)	$0.50 – 0.575	$0.50 – 0.575	$0.50 – 0.575

KANSAS (F. o. b. refinery Kansas destination)

38-40 straw distillate	3.50	3.50 – 3.75	3.50 – 3.75
36-38 straw distillate	3.00	3.25	3.25
32-36 straw gas oil	3.00	3.25 – 3.50	3.25 – 3.50
18-22 fuel oil (per bbl.)	$0.75 – 0.80	$0.80 – 0.85	$0.80 – 0.85
10-14 fuel oil (per bbl.)	$0.70 – 0.725	$0.725– 0.775	$0.725– 0.775

NORTH TEXAS (F. o. b. North Texas refineries)

38-40 straw distillate	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
38-40 p.w. treated distillate	3.25	3.25	3.25
32-36 gas oil, cracked	2.375– 2.50	2.50	2.50
32-36 St. reduced gas oil	2.25 – 2.50	2.375– 2.50	2.375– 2.50
24-26 fuel oil (per bbl.)	$0.60	$0.60 – 0.65	$0.60 – 0.65
20-24 fuel oil (per bbl.)	$0.50	$0.50 – 0.55	$0.55
18-22 fuel oil (per bbl.)	$0.45	$0.45 – 0.50	$0.45 – 0.50

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment)

34-38 gas oil	2.50	2.50 – 2.75	2.50 – 2.75
30-32 gas oil	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
28-30 zero gas oil	2.50	2.50 – 2.875	2.50 – 2.875
18-22 fuel oil (per bbl.)	$0.60 – 0.80	$0.60 – 0.80	$0.60 – 0.80

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	2.75	2.75	3.00
30-32 gas oil, straw	2.75	2.75	3.00
14-16 fuel oil (per bbl.)	$0.75 – 0.85	$0.75 – 0.85	$0.75 – 0.85

ARKANSAS (Ark., N. La. and Miss. destination)

30-32 gas oil, straw	2.75	2.75	2.75
32-36 dark gas oil	2.75	2.75	2.75
28-30 gas oil	2.50	2.50	2.50
20-24 fuel oil (per bbl.)	$0.95	$0.95	$0.95
9-12 fuel oil (per bbl.)	$0.75	$0.75	$0.75
Black oil	3.25	3.25	3.25

CALIFORNIA (F. o. b. San Joaquin Valley. Nominal pipe line charge to San Francisco 24c per bbl. more and to San Pedro 20c per bbl. more.)

14-18 fuel oil (per bbl.)	$0.50 –$0.65	$0.50 –$0.65	$0.50 –$0.65
14-18 Bunker oil (per bbl.)	$0.70 –$0.80	$0.70 –$0.80	$0.70 –$0.75
30-34 gas oil (per bbl.)	$0.80 –$1.00	$0.80 –$1.00	$0.85 –$1.05
27 Plus Diesel oil (per bbl.)	$0.80 –$0.95	$0.80 –$0.95	$0.85 –$1.00

PETROLATUMS

PENNSYLVANIA (Per pound, in barrels, carload lots, f. o. b. refinery. In tank cars ⅛c to ¾c per pound less.) Two refiners quoting.

Snow White	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
Lily White	7.25 – 7.50	7.25 – 7.50	7.25 – 7.50
Cream White	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
Light Amber	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
Amber	3.25 – 3.375	3.25 – 3.375	3.25 – 3.375
Red	3.00	3.00	3.00

PETROLEUM COKE

****OKLAHOMA** (F. o. b. Oklahoma refineries)

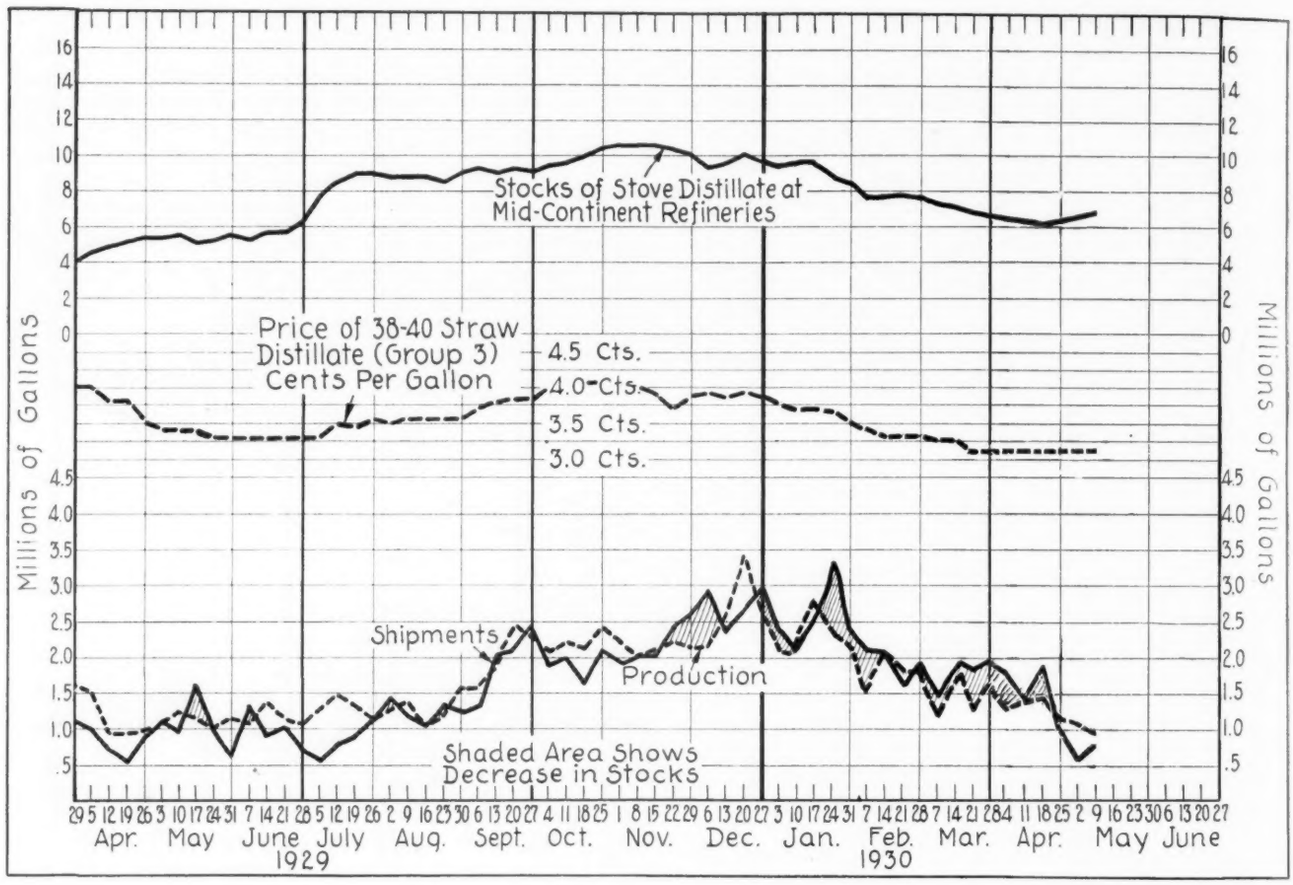
(Per ton in car lots)

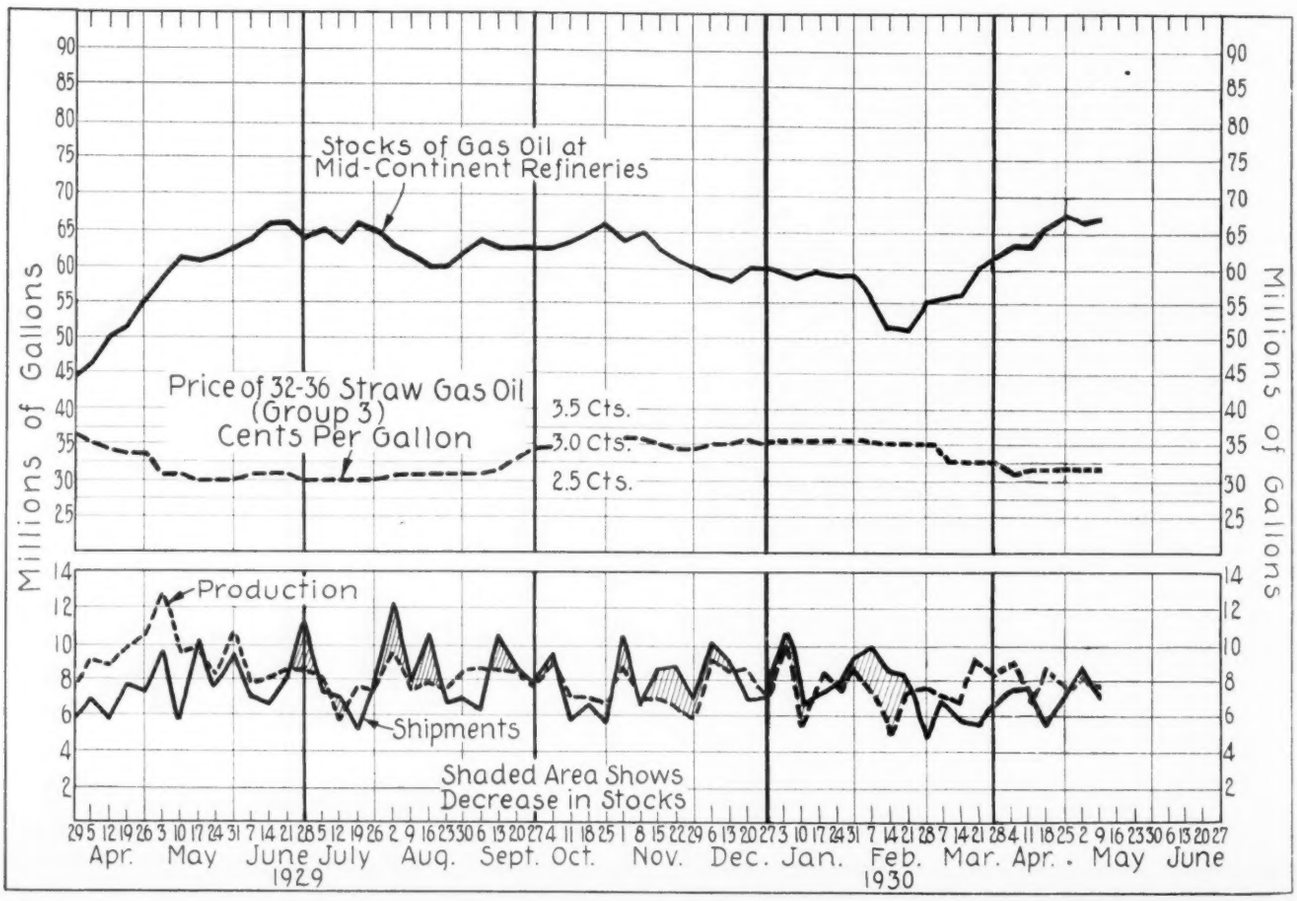
Lump	$4.50 – 5.00	$4.50 – 5.00	$4.50 – 5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

****Represents Both Sales and Quotations.**

Barometer of Mid-Continent Refinery Market—Week Ending May 9

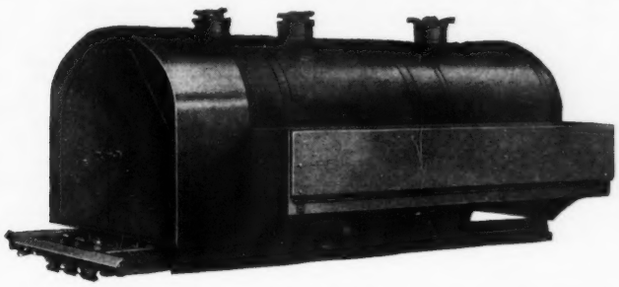
Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Millions of Gallons
Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) Cents Per Gallon
4.5 Cts.
4.0 Cts.
3.5 Cts.
3.0 Cts.
Shipments
Production
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1929
1930


Millions of Gallons
Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Straw Gas Oil (Group 3) Cents Per Gallon
3.5 Cts.
3.0 Cts.
2.5 Cts.
Production
Shipments
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1929
1930

LEADER TRUCK TANKS

—WITH FULL STEEL UNDERFRAME



"Guaranteed Leakproof Till the Steel of the Tank Itself Wears Out"

Tanks are complete with Faucets, Bumper, Can Racks and Bucket Box. Each compartment is a separate, removable tank.

TERMS IF DESIRED
Literature Mailed on Request

LEADER IRON WORKS, INC.

2112 N. JASPER ST. DECATUR, ILLINOIS

PETROLEUM PRODUCTS
From All Fields

Carloads, Tank Cars, and Cargoes
For Domestic or Export

GASOLINE KEROSENE NAPHTHA
CRUDE OIL FUEL OIL GAS OIL FURNACE OIL
CYLINDER STOCKS
UNFILTERED AND FILTERED
BRIGHT STOCKS
COLD SETTLED AND CENTRIFUGED
PALE — RED OILS
WAX — PETROLATUM
TECHNICAL WHITE OILS
WHITE MINERAL OILS

For 35 years of reliability, service and integrity— this Company enjoys an International Reputation

JAMES B. BERRY SONS' CO., INC.
General Office—Oil City, Pa.

District Offices at
New York, Philadelphia, Boston, Chicago
London — Hamburg

Cable Address—JASBER Oil City *All Codes*

"Show Windows" *for* Your Oil

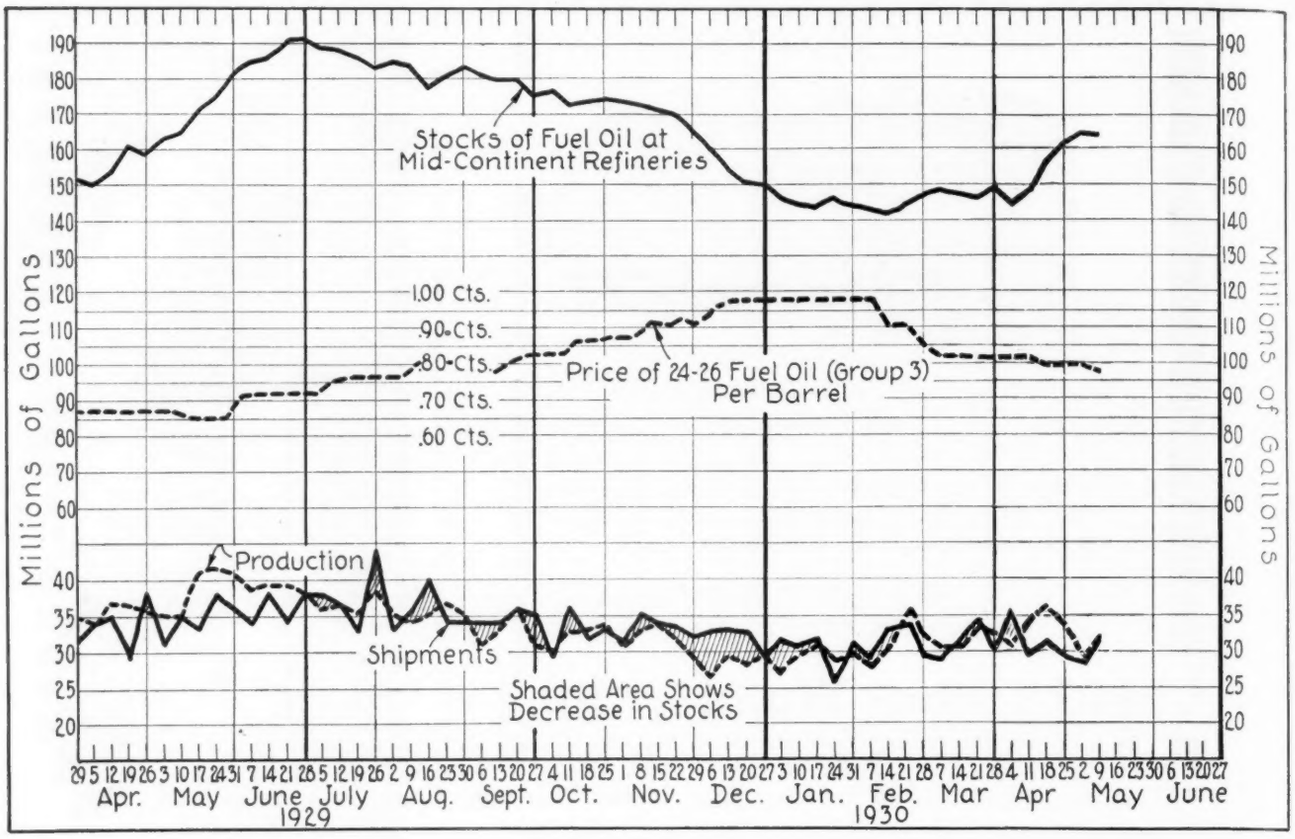
There's a carefully considered reason for every feature of Owens-Illinois Oil Sample Bottles. From the limpid clearness of their perfume bottle glass—handblown to insure thinness—to the exact angle of the side walls, no pains are spared to give the utmost in display to the oil itself.

You will notice that the bottoms of these bottles are blown with particular care, since these are the real "show windows" of your oil. And if you examine the top and finish, you will realize that they are shaped to insure the best possible play of light on your product. A sample bottle will talk for itself. Write for one! Owens-Illinois Glass Company, Toledo, Ohio.

Owens-Illinois
BOTTLES

Barometer of Mid-Continent Refinery Market—Week Ending May 9

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News



California Refinery Market

Cheap Gasoline Disturbs Local Market

LOS ANGELES, May 12

MEMBERS of the California trade expressed considerable concern over the unfavorable trend of Pacific Coast marketing conditions during the past week.

The principal cause for anxiety lay in the large quantity of cheap gasoline flooding the local market, which was threatening to bring about a renewal of general price cutting among Southern California service station operators.

Several refiners explained the presence of this low priced motor fuel as an effort upon the part of small independents to secure the necessary cash for payment of the state tax due May 15, on gasoline sold in California during the first quarter of 1930.

In keeping with the inactive tone of the local market, Pacific Coast exporters reported a slackening of inquiries although there continued to be a standing offer from an Atlantic foreign buyer for several cargoes of high test U. S. Motor. As this buyer wished to close the deal at about 6.50 cents, or the low figure on ordinary U. S. Motor, there seemed little likelihood that any California refiner would see his way clear to unload.

One member of the export trade expressed the opinion that little spot California gasoline would be shipped to the Atlantic seaboard during the coming year, or at least until eastern gasoline stocks had been reduced to a more favorable level.

Up to the present no report has been heard of any refiner taking advantage of Standard of California's offer to buy U. S. Motor at 6.50 cents per gallon, f.o.b. vessel, in San Pedro harbor, and no other California oil company has deemed it advisable to post a similar price.

Quotations on California petroleum products for export remained unchanged during the week with few spot sales reported upon which to base asked prices.

Pacific Coast marketing officials were faced with the necessity of warding off a threatened break in local gasoline markets. If conditions do not right themselves soon after May 15 it was rumored there would be a general reduction in tank wagon prices.

Several large independent refiners were reported to be delivering gasoline in tank truck and trailer lots at 8.50 to 9 cents per gallon, in-state, exclusive of tax. Quoted prices on tank car lots for in-state use moved in some instances for as low as 8 cents, a reduction of 1.50 cents under the previous week's low.

U. S. Motor for delivery out of the state moved at from 7.50 to 8.75 cents and a few cars were reported sold for use in Arizona at between 7 and 7.25 cents.

No change was reported in quotations for other refined oils although several of the trade predicted improvement in fuel oils during the early summer months. They based their predictions upon an improved demand for bunker and diesel oils.

Pennsylvania Market

Trading Continues Quiet

CLEVELAND, May 12.—Trading of practically all commodities was relatively light in the Pennsylvania market during the week ended May 10. Prices, generally speaking, showed but little change.

There were some sellers who reported an exceptionally good demand for their gasolines from the jobbing trade, but by far the majority of traders said that the volume of spot orders which they were receiving had dwindled off considerably. Several asserted they were finding it rather difficult to get shipping instructions on gasoline sold ahead.

U. S. Motor was offered in slightly larger volume at 8.25 cents than it had been the previous week. Occasional distress sales were reported at slightly less than this figure, but such sales were not in sufficient volume to be representative of the general going market.

Kerosene demand was disappointing, according to reports from most sections of the field. At least two refiners reduced their prices for 45 w.w. to 5.375 cents and said that this low figure had attracted a slightly larger volume of orders than they had been receiving previously, but most sellers reported they were finding very little activity.

Fuel oils were quiet with the 36-40 grade offered freely at 4 to 4.125 cents and the lower grades at 3.75 to 4 cents.

Steam refined cylinder stocks continued easy. Good filterable 600 stock appeared in larger volume at 21 cents with occasional reports of this figure being shaded. Filtered stocks were quoted 1 cent a gallon lower.

Demand for bright stock continued quiet and prices were off. No. 8 color stock was offered at 38.50 cents a gallon against a minimum of 39 cents prevailing the week before.

No improvement was noted in the wax situation. Activity on the part of both domestic and foreign buyers was at low ebb. White crude scale was offered at 2.50 cents a pound, New York. Bid prices were running 10 to 15 points lower.

NEW YORK, May 10.—The annual sales conference of New Jersey employes of the Standard Oil Co. of New Jersey, was held at the Traymore hotel, Atlantic City, May 5, 6 and 7.

C. G. Sheffield, vice president in charge of sales, E. G. Barber and E. A. Holbein, directors, New York, attended.

EFFICIENT CLEANING

Empty drums are quickly and easily cleaned with the Perfection Vacuum Unit.

THE Perfection Electric Vacuum Unit saves for you . . . cuts the costs of cleaning your empty oil drums. This compact unit, which consists of a Perfection Vacuum Pump, a ¼ H. P. electric motor and a 15 gallon galvanized tank, is unequalled anywhere for speed . . . efficiency . . . durability.

Mounted securely to a cast iron base, the Perfection Vacuum Unit can be bolted to the floor or moved about as desired. The Perfection Vacuum Pump has more than 16 years of satisfactory service behind it. Each pump is tested to produce at least 27 inches of vacuum. This means that the stickiest and most stubborn grades of grease or oil are quickly removed when you are ready to clean the residue from your empty drums.

Investigate the Perfection Vacuum Unit. Write today for complete information.

PERFECTION MANUFACTURING COMPANY
2194 East Hennepin Ave., Minneapolis, Minn.

KEROSENE
All Gravities · Water White
TRACTOR FUEL

WILLOCK OIL CORPORATION
First National Bank Building · Phone Atlantic 3110
PITTSBURGH, PA.
52 Years Experience · It Counts

Eastern Domestic Markets

Gasoline Advances in All Districts

Staff Special
NEW YORK, May 10

ACTUATED by better weather and a substantial increase in consumption, prices for U. S. Motor gasoline in the majority of seaboard marketing districts moved higher during the past week. New England prices were lower. Other commodities were unchanged.

From New York south to Jacksonville, prices were at a minimum of 8.50 cents, an increase of 0.25 cent over the previous week. The high price in the majority of districts was 9 cents, an increase of 0.25 to 0.50 cent. Philadelphia was an exception, suppliers in that district quoting 8.50 to 8.75 cents.

Due largely to a reduction of 1 cent in tank car prices by the Standard of New York, New England prices were lower. Gasoline was being delivered into the Portland district at 10.125 to 10.90 cents, into the Boston district at 10 cents and into the Providence district at 10 to 10.20 cents. These prices are a reduction of 0.125 to 0.375 under those of a week ago.

Higher prices for gasoline south of the New England district were freely predicted by the trade early in the week. Shading of posted prices had been eliminated the week before and with Shell, Pan American and Richfield, virtually out of the market, the volume of spot orders about cleaned up the gasoline available at under 8.50 cents. Refiners were quick to take advantage of this situation and about the middle of the week advanced prices 0.25 cent and then additional raises were made late in the week.

These prices were expected to be reflected in New England markets and the majority of refiners indicated they would quote Standard's price or higher. Previously quotations had been made on the basis of 8.25 cents f.o.b. New York, which, in the majority of cases, had been less than Standard's price of 6.50 cents, delivered under the net service station price.

Standard announced the 6.50 cent quotation May 6, and made it retroactive to April 29, at which time was a general advance in tank wagon and service station prices. Formerly Standard quoted 5.50 cents, delivered, under the net service station price.

Rumors persisted from some quarters that "the Jersey company would raise its tank wagon prices when the spot tank car price got close enough." Just where "close enough" is, remains to be seen but in the meantime Standard has given no confirmation to the rumor.

Standard did raise its spot tank car quotations late in the week, however, and in view of the small earnings of oil companies generally during the first quarter, the trade believed the company would take the earliest opportunity to increase its revenue from the retail end.

Two New York refiners were reported out of the spot market; one received instructions from the refinery to accept no business for May or June delivery and it has been reported that the other has been buying gasoline.

California gasoline prices were unchanged with the exception of quotations from the Baltimore district. Suppliers in this district quoted 9 cents flat, an increase of 0.50 cent over the previous week.

There are few spot cargoes of California gasoline moving to the east coast at present, suppliers said and in view of the increasing rates for clean boats it was thought unlikely there would be much activity in the near future.

A clean boat was chartered the past week at $1.17 per barrel, the highest figure that market has attained for more than a year. Most boats in the inter-coastal trades are owned by large companies who are using them to transport their own requirements. Independently owned tonnage is comparatively small and practically all of these ships are under charter for months in advance.

Gulf Coast Markets

French Buyer Takes Cargo of Gasoline

Staff Special
NEW YORK, May 10

ASIDE from the sale of one cargo of gasoline for export and a better tone in the coastwise gasoline market, little of interest was noted in Gulf markets the past week. Prices in both the domestic and export divisions of the market were unchanged for the most part.

Early in the week a French buyer placed an order with a large Independent refiner for approximately 65,000 barrels of 64-66, 375 end point gasoline and 15,000 barrels of U. S. Motor. The contract specified June shipment at Association prices.

When the inquiry was entered in the market, it was rumored among the trade that a London concern was quoting under Association prices for the business. The rumor was discredited, however, when the business was finally taken by a refiner who is a member of the Association.

A second French inquiry was received by a New York broker the middle of the week. The buyer was seeking approximately 65,000 barrels of U. S. Motor, 61-63, 390 end point and 64-66, 375 end point gasoline, with the bulk of the cargo to consist of the lighter grades.

Two refiners later were reported to have received this inquiry but as far as could be learned, none but the broker was quoting on the business. It was assumed by most of the trade that the transaction would be placed at Association prices since very little material was available under those prices.

Market observers did not take the increased activity of the past week to mean that foreign storage was low and that a wave of buying was in the offing. The two buyers each needed a cargo to fill out their summer requirements and aside from an occasional inquiry now and then, little business was expected from the other side until buyers begin casting about for their winter requirements.

Suppliers' ideas of prices for U. S. Motor gasoline for coastwise shipment from the Gulf were higher again the past week. Most of them indicated they would not shade 7.50 cents f.o.b. the Gulf although there were one or two traders in New York who believed they could do better with firm offer. Suppliers quoted 7.50 cents for "specification gasoline," which indicated to some of the trade that some off-specification gasoline was being offered for shipment from the Gulf.

There was an unconfirmed report that some business had been done between an east coast buyer and a Gulf refiner the past week, the buyer paying a price for U. S. Motor which netted back approximately 7.25 cents, f.o.b. the Gulf. Some of the trade ventured the opinion that if such a sale was made, the gasoline might have been moved in the seller's boat on which he might have given a slight concession under the prevailing tanker market.

Wax Markets

Foreign, Domestic Demand Quiet

NEW YORK, May 10.—There was little buying of wax during the week ended May 10, either by the domestic or export trade, or among dealers. Prices for all grades were unchanged.

United Kingdom buyers, the only ones to evidence even the slightest interest in the market, continued to bid 2.45 cents per pound f.a.s. New York, for white crude scale but were unsuccessful in buying. One sale was made from New York of 100 tons for June and July movement to England at 2.50 cents, but this was an exception rather than the rule.

Some bargain prices for low melting point waxes were reported but there were no takers for these offerings. Some of the trade believed 2.50 cents for white crude scale at New York might be shaded fractionally but consensus among dealers was that the goods could not be turned for a profit at this slight reduction.

Fully refined waxes also were extremely quiet as far as spot business was concerned. Like scale wax buyers, accounts seemed interested only in future positions at the current market, which business was not viewed favorably by refiners.

There was an unconfirmed report that a quantity of 125-127 A.m.p. had been sold at 3.70 cents c.i.f. Amsterdam, which price compares with the minimum quotation of 3.75 cents, f.a.s. New York. Traders believed this goods originated either from Poland or from foreign storage of some English or American refiner.

Refiners offered the opinion that the future of wax markets was uncertain. Some of them look for prices to hold until the fall buying and then expect an increase while others believed the continued lack of market interest forecasts price recessions. While stocks admittedly are large, they are held by larger refiners and none of the trade expect to see a panic result from the long holder's rush to reduce storage. One eastern refiner reported that while his stocks were ample, it would take only a comparatively small amount of buying to put him on the short side in view of contract obligations which will start in the fall.

A large buyer from abroad inquired late in the week for 750 tons of match wax and white crude scale and was quoted 3.50 and 2.50 cents, respectively, f.a.s. New York harbor. This business was not closed and the refiner who received the inquiry believed the account was only feeling out the market, since he did not circulate his inquiry generally among the trade.

Skilled Supervision
Guarantees the Quality of
Gulf Products

COASTAL AND PARAFFINE CRUDES
GASOLINE — LUBRICATING OILS
NAPHTHA — GAS — OILS
WAX — PETROLEUM COKE
CYLINDER — ENGINE — CORDAGE

Gulf Refining Company

General Sales Offices
PITTSBURGH, PA.

District Sales Offices
New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

STEEL
DRUM ACCESSORIES
CORPORATION
Buffalo, New York
Specialists in Drum Faucets and Gates

Specify
the "BLUE" *Gate*
and our various types of *DRUM FAUCETS*
for all purposes.
We solicit your inquiries for detail information.

Complete Seaboard Market

(Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of sales and quotations. Prices shown below do not include inspection tax levied in some states.)

	Prices May 12	Prices May 5	Prices Apr. 28
U. S. MOTOR GASOLINE			
New York harbor	8.50 – 9.00	8.25 – 8.75	†8.00 – 8.50
Portland district	**10.125–10.30	**10.50–10.80	*9.80
Boston district	**10.00	**10.125–10.50	*9.50
Providence district	**10.00 –10.20	**10.125–10.50	*9.50
Philadelphia district	8.50 – 8.75	8.25 – 8.50	8.25 – 8.50
Baltimore district	8.50 – 9.00	8.25 – 8.50	8.25 – 8.50
Norfolk district	8.50 – 9.00	8.25 – 8.50	8.25 – 8.50
Charleston district	8.50 – 9.00	8.25 – 8.50	8.25 – 8.50
Savannah district	8.50 – 9.00	8.25 – 8.50	8.25 – 8.50
Jacksonville district	8.50 – 9.00	8.25 – 8.50	8.25 – 8.50
CALIFORNIA, U. S. MOTOR GASOLINE			
New York harbor	9.00 – 9.50	9.00 – 9.50	†8.50 – 9.00
Philadelphia district	9.00	9.00	8.50
Baltimore district	9.00	8.50 – 9.00	8.50
‡DOMESTIC AVIATION GASOLINE			
New York harbor	12.00 –12.75	11.50 –12.50	11.50 –12.50
Philadelphia	11.75 –12.00	11.50	11.50
Baltimore	12.00 –12.50	11.50 –12.50	11.50 –12.50
Boston	11.50 –13.00	11.50 –12.50	11.50 –12.50

‡Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122°F.; 50% recovery at 221°; 90% at 311°; 96% at 347°; end point 374° F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

WATER WHITE KEROSENE			
New York harbor	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75
Philadelphia district	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75
Baltimore district	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75
GAS OIL: 28-34 Gravity			
New York harbor	4.75 – 5.25	4.75 – 5.25	4.75 – 5.25
Boston district	4.75 – 5.25	4.75 – 5.25	4.75 – 5.25
FURNACE OIL: 36-40 Gravity			
New York harbor	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
Boston district	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
GRADE C BUNKER OIL (Lighterage 5c per bbl. additional)			
New York Harbor	$1.15	$1.15	$1.15
Boston district	$1.15	$1.15	$1.15
DIESEL OIL			
New York harbor	$2.00 –$2.10	$2.00 –$2.10	$2.00 –$2.10

*Minimum delivered. †Nominal. **Delivered prices.

New York Export Market

(Lubricating oils are per gal. in bbls. F.a.s. New York)

	May 12	May 5	Apr. 28
CYLINDER OILS (Pennsylvania Products)			
Bright stock, dark	45.00 –47.00	45.00 –47.00	45.00 –47.00
600 D filtered	38.75 –40.00	38.75 –40.00	38.75 –40.00
600 Warren E filtered	35.00 –37.00	35.00 –37.00	35.00 –37.00
600 s.r. unfiltered	28.50 –29.50	28.50 –29.50	28.50 –29.50
650 s.r. unfiltered	35.00 –37.00	35.00 –37.00	35.00 –37.00
600 flash, s.r.	37.50 –40.00	37.50 –40.00	37.50 –40.00
630 flash, s.r.	42.50 –44.00	42.50 –44.00	42.50 –44.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00 –21.00	20.00 –21.00	20.00 –21.00
250 vis. No. 6 color	17.50 –18.50	17.50 –18.50	17.50 –18.50
200 vis. No. 6 color	16.50 –17.50	16.50 –17.50	16.50 –17.50
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¼ color	23.00 –24.00	23.00 –24.00	23.00 –24.00
180 vis. No. 3¼ color	19.00	19.00	19.00
100 vis. No. 2¼ color	15.50 –16.00	15.50 –16.00	15.50 –16.00
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	30.00	30.00	30.00
500 vis. No. 6½ color	26.50 –27.50	26.50 –27.50	26.50 –27.50
400 vis. No. 7¼ color	23.00 –25.00	23.00 –25.00	23.00 –25.00
300 vis. No. 6 color	20.00 –22.00	20.00 –22.00	20.00 –22.00
200 vis. No. 6 color	18.00 –20.00	18.00 –20.00	18.00 –20.00

Wax Markets

(Prices in cents per pound, A.S.T.M. tests; A.M.P. F.a.s. carload lots)

	May 12	May 5	Apr. 28
NEW YORK			
124-126 Yellow crude scale	2.375– 2.50	2.375– 2.50	2.50
122-124 White crude scale	2.50 – 2.625	2.50 – 2.625	2.55 – 2.625
124-126 White crude scale	2.50 – 2.625	2.50 – 2.625	2.55 – 2.625
123-125 Fully refined	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
125-127 Fully refined	3.75 – 3.875	3.75 – 3.875	3.75 – 3.875
128-130 Fully refined	3.875– 4.125	3.875– 4.125	4.00 – 4.125
130-132 Fully refined	4.25 – 4.50	4.25 – 4.50	4.25 – 4.50
133-135 Fully refined	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
135-137 Fully refined	5.50	5.50	5.50
NEW ORLEANS			
124-126 Yellow crude scale	2.375– 2.50	2.375– 2.50	2.50
122-124 White crude scale	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
124-126 White crude scale	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
123-125 Fully refined	3.50	3.50	3.50
125-127 Fully refined	3.75	3.75	3.75
128-130 Fully refined	3.875– 4.00	3.875– 4.00	4.00
130-132 Fully refined	4.25 – 4.375	4.25 – 4.375	4.25 – 4.375
133-135 Fully refined	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. or more unless otherwise noted. Bulk gasoline and kerosene prices are posted quotations of the Export Petroleum Assoc., Inc., governing about 90% of the gasoline and kerosene shipped to foreign ports from the Gulf)

	Prices May 12	Prices May 5	Prices Apr. 28
GASOLINE			
U. S. Motor	8.00	8.00	8.00
60-62, 400 e.p.	9.00	9.00	9.00
61-63, 390 e.p.	9.25	9.25	9.25
64-66, 375 e.p.	9.50	9.50	9.50
U. S. Motor, cases (cargoes)	$1.85	$1.85	$1.85
64-66, cases (cargoes)	$2.00	$2.00	$2.00
KEROSENE			
44 water white	7.00	7.00	7.00
41-43 prime white	6.00	6.00	6.00
Water white, cases (cargoes)	$1.75	$1.75	$1.75
Prime white, cases (cargoes)	$1.65	$1.65	$1.65
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
*30 plus translucent gas oil	3.875– 4.00	3.875– 4.00	3.875– 4.00
Grade C bunker oil	$1.05	$1.05	$1.05
Grade C bunker oil, cargoes	$0.75 –$0.80	$0.75 –$0.80	$0.75 –$0.80

*Less than ½ of 1% sulphur.

MEXICAN CRUDE AND BUNKER OILS (f. o. b. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$0.68 –$0.70	$0.68 –$0.70	$0.70
Grade C bunker oil for bunkering purposes, taxes paid	$1.00	$1.00	$1.00
SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F. cold test 0 Tanker, f. o. b. Houston)			
100 vis. No. 2 unfiltered pale	5.75 – 6.125	5.75 – 6.00	5.75 – 6.00
200 vis. No. 3 unfiltered pale	8.00 – 8.75	8.00 – 8.50	8.00 – 8.50
300 vis. No. 3 unfiltered pale	8.875– 9.50	8.875– 9.50	8.875– 9.50
500 vis. No. 3½ unfiltered pale	10.25 –11.25	10.25 –11.25	10.25 –11.25
750 vis. No. 4 unfiltered pale	12.50 –13.25	12.50 –12.75	12.50 –12.75
1200 vis. No. 5 unfiltered pale	16.00 –18.00	16.00 –18.00	16.00 –18.00
200 vis. No. 5-6 red oil	7.00 – 7.50	7.00 – 7.25	7.00 – 7.25
300 vis. No. 5-6 red oil	8.375– 8.75	8.375– 8.50	8.375– 8.50
500 vis. No. 5-6 red oil	9.25 – 9.50	9.25 – 9.50	9.25 – 9.50
750 vis. No. 5-6 red oil	11.50	11.50	11.50
1200 vis. No. 5-6 red oil	15.00 –15.50	15.00 –15.25	15.00 –15.25

Gulf Domestic Market

(Prices are f.o.b. Gulf oil terminals in Texas and Louisiana in shipments of 20,000 bbls. or more, representing sellers' opinions, for domestic shipment only.)

	May 12	May 5	Apr. 28
U. S. Motor gasoline	7.50	7.25 – 7.50	7.50
41-43 w.w. kerosene	5.875– 6.25	5.875– 6.25	5.875– 6.25
*26-32 translucent gas oil	3.75 – 4.00	3.75 – 4.00	3.75 – 4.00

*Less than ½ of 1% sulphur.

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	May 12	May 5	Apr. 28
Gasoline, U. S. Motor, 53-55 Gravity	6.50 – 7.50	6.50 – 7.50	6.00 – 7.00
Gasoline, U. S. Motor-blends and special cuts	7.25 –10.00	7.25 –10.00	7.25 –10.00
Gas Oil, 30-34, per barrel	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.05
Diesel Oil, 27 plus, per barrel	$0.80 –$1.00	$0.80 –$1.00	$0.75 –$1.00
Bunker oil, 14-18, per barrel	$0.65 –$0.85	$0.65 –$0.85	$0.65 –$0.85
Fuel oil, 14-18 per barrel	$0.60 –$0.85	$0.60 –$0.85	$0.60 –$0.85
Kerosene, 38-40 w.w., 125-150 flash, per gal.	5.00 – 6.00	5.00 – 6.00	5.00 – 6.00
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Kerosene, 38-40 w.w., 125-150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

†Note: Above Pacific Export market prices for gasoline and kerosene in cargo lots apply only on goods for coastwise shipment. Gasoline and kerosene prices for shipment to foreign ports are determined as follows: Difference in freight between U. S. Gulf to European Continent and California to European Continent —this difference plus 0.125c for handling, deducted from prices posted at U. S. Gulf by the Export Petroleum Assoc., Inc., which are above prices.

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	May 12 Crude &/or Fuel	Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	40	42/6
Gulf to U. K. or Continental ports*	26-28	30-31
North Atlantic to U. K. or Continental ports*	23/6-25	27-28
Calif. to North Atlantic ports (not E. of N. Y.)	$0.90-$1.00	$1.15-$1.25
Gulf to North Atlantic ports (not E. of N. Y.)**	40	45

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.

**Venezuela loading same rate. For Tampico 3c to 4c per bbl. additional.

MORE PROFIT FOR THE OIL MAN

The new Autocar Six Wheeler, powered with the Autocar "Blue Streak" Big Six engine, hauls larger loads, longer distances with greater speed and more safety than has previously been possible.

It is built in three wheelbase lengths: 195, 211 and 237 inches, front wheel tread of 71¾ inches, rear 75 inches. A load distribution is accomplished which enables the hauling of full capacity without violation of highway limitations.

Developing 101 horsepower at 2000 r. p. m., the "Blue Streak" motor is amply capable of hauling maximum loads at sustained speed over long periods.

The semi-irreversible cam-and-lever steering gear, with 20-inch steering wheel, makes handling easy; and the Westinghouse air brakes, acting on all six wheels simultaneously, provide perfect control, with a higher factor of safety.

This modernized Autocar unit is designed and precision-built to meet the constantly growing demand for larger capacity, hauled at greater speed over longer distance. In the instance illustrated, it is taking an active part in lowering the cost of distribution for its owner . . . Write for complete details.

The massive tanker illustrated is doing daily heavy duty for the Standard Oil Company of Pennsylvania, delivering three, and frequently four, loads a day covering fifty-five to sixty or more miles in the Philadelphia district.

PRECISION BUILT

AUTOCAR TRUCKS

The AUTOCAR Company, Ardmore, Pa., Established 1897

Tank Wagon, Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect May 12, 1930, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Atlantic City, N. J.	14.5	2	16.5	18.5	13.5
Newark, N. J.	13.5	2	15.5	17.5	12.5
Annapolis	14	4	18	20	13
Baltimore, Md.	13.2	4	17.2	19.2	10.5
Cumberland, Md.	15	4	19	21	14
Washington, D. C.	13.7	2	15.7	17.7	12.7
Danville, Va.	14.8	5	19.8	21.8	13.8
Norfolk, Va.	13.3	5	18.3	20.3	12
Richmond, Va.	13.7	5	18.7	20.7	12.7
Roanoke, Va.	15	5	20	21	14
Petersburg, Va.	14.3	5	19.3	21.3	13.3
Charleston, W. Va.	14.5	4	18.5	20.5	12.5
Keyser, W. Va.	15.1	4	19.1	21.1	14.1
Parkersburg, W. Va.	13.2	4	17.2	19.2	11.2
Wheeling, W. Va.	14.4	4	18.4	20.4	12.4
Charlotte, N. C.	14.3	5	19.3	20.3	14.3
Hickory, N. C.	15.8	5	20.8	22.8	14.8
Mt. Airy, N. C.	15.5	5	20.5	22.5	14.5
Salisbury, N. C.	15.7	5	20.7	20	14.7
Charleston, S. C.	13.3	6	19.3	21.3	12.3
Columbia, S. C.	15.2	6	21.2	23.2	14.2

Note: 2c per gallon discount off t.w. price of gasoline to dealers and commercial consumers thru S. O. New Jersey territory.

CONTINENTAL OIL

Denver, Colo.	13	4	17	20	15.5
Pueblo, Colo.	14	4	18	21	15.5
Grand Junc., Colo.	19	4	23	26	19
Casper, Wyo.	15	4	19	22	14
Cheyenne, Wyo.	16.5	4	20.5	23.5	15.5
Butte, Mont.	19.5	5	24.5	27.5	20
Helena, Mont.	19.5	5	24.5	27.5	20
Salt Lake City, Utah.	16.5	3½	20	23	17
Boise, Ida.	18.5	5	23.5	26.5	19
Twin Falls, Ida.	18.5	5	23.5	27.5	19
Albuquerque, N. M.	16	5	21	24	17

S. O. CALIFORNIA

			*Plant		
Phoenix, Ariz.	14	4	18	22	20
Los Angeles, Cal.	18.5	3	21.5	24.5	15.5
Fresno, Cal.	19	3	22	25	17
San Francisco, Cal.	19	3	22	25	15.5
Reno, Nev.	23	4	27	30	19
Portland, Ore.	19.5	4	23.5	26.5	16.5
Seattle, Wash.	19.5	3	22.5	25.5	16.5
Spokane, Wash.	23.5	3	26.5	29.5	20.5
Tacoma, Wash.	19.5	3	22.5	25.5	16.5

Note: 6c per gal. discount to dealers off t.w. price of gasoline to customers taking tank truck delivery, thru S. O. California territory except 1c discount at Phoenix to dealers only.

*Prices in the fourth column represent retail sale prices of gasoline for delivery into fuel tanks of customers' automotive equipment at S. O. California refineries, terminals and district depots as this company operates no retail service stations.

S. O. LOUISIANA

Little Rock, Ark.	13	5	18	19	13
Alexandria, La.	13	4	17	17	†14
Baton Rouge, La.	12	4	16	17	†14
Lake Charles, La.	11	*5	16	16	†14
New Orleans, La.	11	*5	16	16	†12
Shreveport, La.	12	4	16	18	†14
Lafayette, La.	13	*5	18	20	†14
Bristol, Tenn.	15	5	20	22	14
Chattanooga, Tenn.	15	5	20	22	13
Knoxville, Tenn.	15	5	20	22	16
Nashville, Tenn.	14	5	19	21	16
Memphis, Tenn.	13	5	18	20	12.5

Note: 2c per gallon discount off t.w. price of gasoline to dealers thru S. O. Louisiana territory.

*Lake Charles, New Orleans and Lafayette gasoline tax includes 4c state tax and 1c parish tax. New Orleans kerosene price includes 1c parish tax in addition to 1c state tax.

†Kerosene price in Louisiana includes 1c state tax.

S. O. KENTUCKY

Ashland, Ky.	15	5	20	21	15
Catlettsburg, Ky.	15	5	20	21	15
Lexington, Ky.	14	5	19	20	14.5
Louisville, Ky.	15	5	20	22	13
Covington, Ky.	15	5	20	21	14.5
Clarksdale, Miss.	14	5	19	21	12.5
Gulfport, Miss.††	16.5	5	21.5	23.5	13
Jackson, Miss.	15	5	20	22	13

Latest Changes in Tank Wagon Prices

Gasoline

S. O. Ohio—T.w. up 1c, s.s. 2c, thru Columbiana county, except East Palestine, thru Saline township in Jefferson county, and thru Darke county, putting all these areas on statewide schedule of 19c t.w. and 20c s.s., **May 12.**

Continental Oil—S.s. only up 3c, Salt Lake City, to 23c, **May 1.**

Aviation gasoline at Salt Lake City was cut ½c, to 23c, **May 1.**

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Natchez, Miss.	14.5	5	19.5	21.5	13
Vicksburg, Miss.	14.5	5	19.5	21.5	13
Birmingham, Ala.‡‡	17	4	21	23	14.5
Mobile, Ala.‡	14	4	18	18	13.5
Montgomery, Ala.*	17	4	21	23	15
Atlanta, Ga.	15	6	21	23	†15.5
Augusta, Ga.	14	6	20	22	†15.5
Macon, Ga.	14	6	20	22	†14
Savannah, Ga.	13	6	19	21	†14
Jacksonville, Fla.	15	6	21	23	14
Miami, Fla.	16	6	22	24	14
Tampa, Fla.	15	6	21	23	13
Pensacola, Fla.**	13	6	19	21	13.5

Note: Net price of gasoline to dealers is 2c under posted t.w. price thru S. O. Kentucky territory.

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

‡Mobile gasoline prices include 1c city tax.

‡‡Birmingham gasoline prices include 1c city tax

S. O. NEBRASKA

Omaha, Neb.	15.25	4	19.25	21.25	13.25
McCook	16.75	4	20.75	22.75	14.75
Norfolk	15.75	4	19.75	21.75	13.75
North Platte	16.75	4	20.75	22.75	14.50
Scottsbluff	16.75	4	20.75	22.75	14.25

Note: Discounts: 1c per gal. off tank wagon price of gasoline for 1,000 gallon dumps per month to consumers taking tank wagon delivery only.

S. O. INDIANA

Chicago, Ill.	15	3	18	19	13
Decatur, Ill.	15.2	3	18.2	19.2	13.1
E. St. Louis, Ill.	14.4	3	17.4	18 4	12.2
Joliet, Ill.	15.4	3	18.4	19.4	13.3
Peoria, Ill.	15.2	3	18.2	19.2	13 1
Quincy, Ill.	15.2	3	18.2	19.2	12 9
Indianapolis, Ind.	15.2	4	19.2	20.2	14.2
Evansville, Ind.	15	4	19	20	14
South Bend, Ind.	15.4	4	19.4	20.4	14 4
Detroit, Mich.	15.8	3	18.8	19.8	14 7
Grand Rapids, Mich.	15.7	3	18.7	19.7	14 6
Saginaw, Mich.	15.9	3	18.9	19.9	14 8
Green Bay, Wisc.	15.6	2	17.6	18.6	13.4
Madison, Wisc.	15.3	2	17.3	18 3	13.1
Milwaukee, Wisc.	15.1	2	17.1	18.1	12.9
La Cross, Wisc.	16.2	2	18.2	19.2	14
Minneapolis, Minn.	16.2	3	19.2	20.2	13.9
Duluth, Minn.	16.5	3	19.5	20.5	13.9
Mankato, Minn.	16.1	3	19.1	20.1	13.7
Des Moines, Ia.	15.5	3	18.5	19.5	13.3
Davenport, Ia.	15.5	3	18.5	19.5	13.3
Sioux City, Ia.	15.1	3	18.1	19.1	12.9
Mason City, Ia.	15.5	3	18.5	19.5	13.3
St. Louis, Mo.	*14.9	2	16.9	17.9	12.3
Kansas City, Mo.	†15.9	2	17.9	18.9	11.6
St. Joseph, Mo.	†15.5	2	17.5	18.5	12.2
Fargo, N. D.	17.9	3	20.9	21.9	15.9
Grand Forks, N. D.	18.2	3	21.2	22.2	16.2
Minot, N. D.	17.9	3	20.9	21.9	15.9
Pierre, S. D.	16	4	20	21	14.4
Huron, S. D.	16.3	4	20.3	21.3	14.7
Wichita, Kans.	13.8	3	16.8	14.8	11.8
Bartlesville, Okla.	13.5	4	17.5	18.5	11.5

S O. Indiana's quantity contract price schedule thru territory (except in Chicago and Detroit, which see below) on tank truck deliveries of gasoline, figured from the service station price is 2c for 500 gals. or more a month; 2½c for 2,000 gals. or more a month; 3c for 6,000 gals. or more a month; and 4½c for 100,000 gals. or more a month.

In Chicago and vicinity, these discounts apply: Over 500 gals. per month, 2c per gal. off service station price; over 1,000 gals. per month, 4c per gal. off service station price; over 50,000 gals. per month, 4½c per gal. off s.s. price; over 75,000 gals., 5c off.

In Detroit, dealers and consumers signing contract for all gasoline for one year, get 4c per gal. off s.s. price. Non-contracted accounts get 3c off s.s. price. Those buying 100,000 gals. or more a month, 4½c per gal. off s.s. price.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. OHIO

Ohio state-wide	15	4	19	20	†13
Ashtabula, Hancock, Jackson, Licking, Muskingum, Perry, Preble and Scioto Counties:	14	4	18	18	13
Athens County	12	4	16	16	13
Franklin (except Columbus west of river)	13	4	17	17	13

Note: Discount to dealers and commercial accounts generally thru Ohio is 2c per gal. off t.w. price with some exceptions. In counties where prices are below normal, discount is 3c per gal. off t.w. price.

†Kerosene t.w. price in Darke County is 11c; in Paulding County 12c.

MAGNOLIA PETROLEUM

Muskogee, Okla.	12	4	16	19	10
Oklahoma City	12	4	16	19	10
Tulsa, Okla.	12	4	16	20	10
Fort Smith, Ark.†	10	†4	14	15	12
Little Rock, Ark.	13	5	18	19	13
Texarkana, Ark.*	12	4	16	16	12
Dallas, Tex.	12	4	16	20	12
Fort Worth, Tex.	12	4	16	19	12
Houston, Tex.	11	4	15	19	11
San Antonio, Tex.	11	4	15	19	11
El Paso, Tex.	12	4	16	20	13

*Within city of Texarkana, the state tax on gasoline is 4c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 4c applies. In this district outside of the city, the 5c Arkansas tax applies.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

Greater New York City: Boroughs of Manhattan, Bronx, Queens & Kings	14.3	2	16.3	18.3	11.3
Borough of Richmond	14.7	2	16.7	18.7	11.7
Albany, N. Y.	15.6	2	17.6	19.6	12.6
Buffalo, N. Y.	14.8	2	16.8	18.8	11.8
Rochester, N. Y.	15	2	17	19	12
Syracuse, N. Y.	15.8	2	17.8	19.8	12.8
Boston, Mass.	14.5	2	16.5	18.5	11.5
Augusta, Me.	15.8	4	19.8	21.8	12.8
Manchester, N. H.	15.4	4	19.4	21.4	12.4

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both; Florida, 1/8c on both; Illinois, 3/100c on both; Indiana, 4/25c to 1/2c on both; Kansas, 3/50c on both; Louisiana, 1/32c on gasoline; Minnesota, 3/50c on both; Missouri, 3/10c to 1/2c on both; Nebraska, 3/100c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c to 4/5c on kerosene; Wisconsin, 3/50c on both. Kerosene inspection fees only, per gallon; Iowa 7/100c; Michigan 1/5c to 4/5c per gal.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

Prices in Effect May 12, 1930

S. O. NEW YORK

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Burlington, Vt.	16.3	4	20.3	22.3	13.3
New Haven, Conn.	15.6	2	17.6	19.6	12.6
Providence, R. I.	14.7	2	16.7	18.7	11.7

Note: S. O. New York allows 3c off t.w. price to dealers in New York City, and 2c off t.w. price thru rest of territory.

ATLANTIC REFINING

Pittsburgh, Pa.	15	*	15	21	13
Philadelphia, Pa.	15	*	15	21	13
Allentown, Pa.	15	*	15	21	13
Erie, Pa.	15	*	15	21	13
Scranton, Pa.	15	*	15	21	13
Altoona, Pa.	15	*	15	21	13
Dover, Del.	15	3	18	20	13
Wilmington, Del.	15	3	18	20	13
Boston, Mass.	14.5	2	16.5	18.5	11.5
Springfield, Mass.	15.5	2	17.5	19.5	12.5
Worcester, Mass.	15.3	2	17.3	19.3	12.3
Fall River, Mass.	14.1	2	16.1	17.1	12.1
Providence, R. I.	14.7	2	16.7	18.7	11.7
Hartford, Conn.	15.5	2	17.5	19.5	12.5
New Haven, Conn.	15.6	2	17.6	19.6	12.6
Atlantic City, N. J.	14.5	2	16.5	18.5	13.5
Camden, N. J.	13.6	2	15.6	17.6	12.6
Trenton, N. J.	14	2	16	18	13
Annapolis, Md.	14	4	18	20	13
Baltimore, Md.	13.2	4	17.2	19.2	10.5
Hagerstown, Md.	14.7	4	18.7	20.7	13.7
Richmond, Va.	13.7	5	18.7	20.7	12.7
Wilmington, N. C.	13.4	5	18.4	20.4	12.4
Brunswick, Ga.	15	6	21	23	**15
Jacksonville, Fla.	15	6	21	23	14

Note: 2c per gal. discount off t.w. price of gasoline on sales to dealers; discount to commercial accounts under contract for one year in accordance with Code of Ethics.

*4-cent state tax is collected by retail dealer and paid by him directly to state.

**Georgia kerosene prices include 1c state tax.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.7	17
Detroit	17.4	18.9	20.7
Kansas City	†15.9	†17.4	†19.2
Milwaukee	16.4	*19.9	*21.7
Minneapolis	**20.7	**22.2	**24
St. Louis	15.6	17.1	18.9
New York		16	23
Boston		19	23

*Includes 2c state tax. †Includes 1c city tax.
**Includes 3c state tax.

Petroleum Spirits (Solvent)

Tank Cars (F.o.b. refinery or seaboard terminal)	
New York harbor	11.00
Philadelphia district	11.00
Providence	11.50
Tank Wagon or Steel Barrels	
New York City	18
Syracuse	17–18
Rochester	18
Buffalo	17–18
Providence	19
Boston	19
Bridgeport	16–18
Newark	18
Philadelphia	16
Baltimore	18

Note: 2c off above t.w. prices to large buyers in some instances.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Toronto	19.5	5	24.5	28	20.5
Ottawa	19.5	5	24.5	28	20.5
North Bay	22.5	5	27.5	33	27
Ft. William	22.5	5	27.5	31	22.5
Border Cities, including Windsor	18.5	5	23.5	27	19.5
MANITOBA					
Winnipeg	21.5	5	26.5	30	21.5
SASKATCHEWAN					
Regina	26	5	31	35	26
ALBERTA					
Edmonton	27.5	5	32.5	36	27.5
Calgary	23.5	5	28.5	32	23.5
BRITISH COLUMBIA					
Vancouver	23	5	28	32	24
QUEBEC					
Montreal	20.5	5	25.5	29	21.5
Quebec City	21.5	5	26.5	30	22.5
Three Rivers	21.5	5	26.5	30	22.5
NEW BRUNSWICK					
St. John	20	5	25	29	22
Moncton	20	5	25	29	22
NOVA SCOTIA					
Halifax	20	5	25	29	22
PRINCE EDWARD ISLAND					
Charlottetown	20	5	25	29	22

Note: In districts surrounding these points 1c additional is added to city price.

Aviation Gasoline Prices

Following are tank wagon prices of aviation gasoline in principal marketing territories and showing state and municipal taxes:

S. O. NEW JERSEY

Prices in Effect May 12, 1930

	T.W.	Tax	Total
Newark, N. J.	15.4	2	17.4
Baltimore, Md.	12.5	4	16.5
Washington, D. C.	15.5	2	17.5

S. O. OHIO

Thru Ohio	17	4	21

Discounts given by S. O. Ohio: For airport delivery only: 2,000 gals. or over per month, 1c per gal.; 6,000 gals. or over per month, 2c; 12,000 gals. and over per month, 3c.

S. O. INDIANA

Chicago	17	3	20
Indianapolis, Ind.	17.2	4	21.2
Detroit, Mich.	17.8	3	20.8
Milwaukee, Wis.	17.1	2	19.1
Minneapolis, Minn.	18.2	3	21.2
St. Louis, Mo.	16.4	2½	18.9
Kansas City, Mo.	16.9	3	19.9
Fargo, N. D.	19.9	3	22.9
Huron, S. D.	18.3	4	22.3
Wichita, Kan.	15.8	3	18.8

In S. O. Indiana territory, buyer pays state and city taxes on aviation gasoline, and if he can get a refund from the state, he does so. St. Louis tax of 2½c includes ½c city tax and Kansas City tax includes 1c city tax.

S. O. LOUISIANA

New Orleans, La.	16	5	21
Nashville, Tenn.	18	5	23
Memphis, Tenn.	17	5	22

2c per gal. discount off above t.w. prices to dealers and commercial consumers.

S. O. NEBRASKA

Omaha	18.25	4	22.25

2c per gal. refund to resellers.

CONTINENTAL OIL CO.

*Denver, Col.	16	4	20
Cheyenne, Wyo.	19.5	4	23.5
Helena, Mont.	25.5	5	30.5
Salt Lake City, Utah.	19.5	3.5	23
†Albuquerque, N. M.	19	5	24
Boise, Ida.	22	5	27

*1c per gal. discount to dealers at Denver. †2c per gal. discount to dealers at Albuquerque.

S. O. CALIFORNIA

Phoenix, Ariz.	17	4	21
Los Angeles, Cal.	19.5	3	22.5
San Francisco, Cal.	20	3	23
Reno, Nev.	24	4	28
Portland, Ore.	19.5	4	23.5
Seattle, Wash.	19.5	3	22.5
Spokane, Wash.	23.5	3	26.5

4c per gal. discount off t.w. price of gasoline to customers taking tank truck delivery, through S. O. California territory, except 1c discount at Phoenix.

Col. Jouett Joins S. O. Louisiana

NEW YORK—Lieut. Col. John J. Jouett, recently commandant of Fort Crockett, Galveston, Tex., and wartime commander of air corps units under General Foulois, has become head of the aviation department of the Standard Oil Co. of Louisiana.

Col. Jouett has been for 20 years in the service, having all four air ratings of airplane pilot, airship pilot, airplane observer and balloon observer. He is a West Point graduate, and among other things since the war, has been recently chief of personnel of the Army Air Corps and Fort Crockett commandant.

SOUTH BOSTON, Va.—The Service Oil Co. Inc. is building a service station on the outskirts of this city. Six pumps will be installed, according to J. R. Booth, president.

"PETROLEUM"

Magazine for the interests of the whole oil industry and oil trade. Subscription-fee for each volume (52 copies):

$12 a year for the United States
3 pounds a year for England

"TAEGLICHE BERICHTE ueber die PETROLEUMINDUSTRIE"
("Daily Oil Reports")

Special magazine for the interests of the whole oil industry and oil trade.

Subscription-fee:

$28 a year for the United States
7 pounds a year for England

Published by

"VERLAG FUER FACHLITERATUR GES. M. B. H."

Berlin W. 62, Courbierestrasse 3
Vienna XIX/1., Vegagasse 4

You'll Sell More Oil Than Ever Before

Show your "drive-in" customers how they can save money buying in bulk. Sell them by the *drum* instead of by the gallon.

KWART KWICK
Home Oil Pump

Fits any drum or barrel—especially designed for the private user. Lowest-priced fool-proof home oil pump on the market. Works equally well with oil gas, etc. Strongly built of brass, steel and cast iron—nothing to get out of order. Special quantity discounts to oil companies.

By distributing this pump with bulk sales, you can increase your oil volume 100% to 200%. Others are doing it. Mail coupon today for complete information and prices.

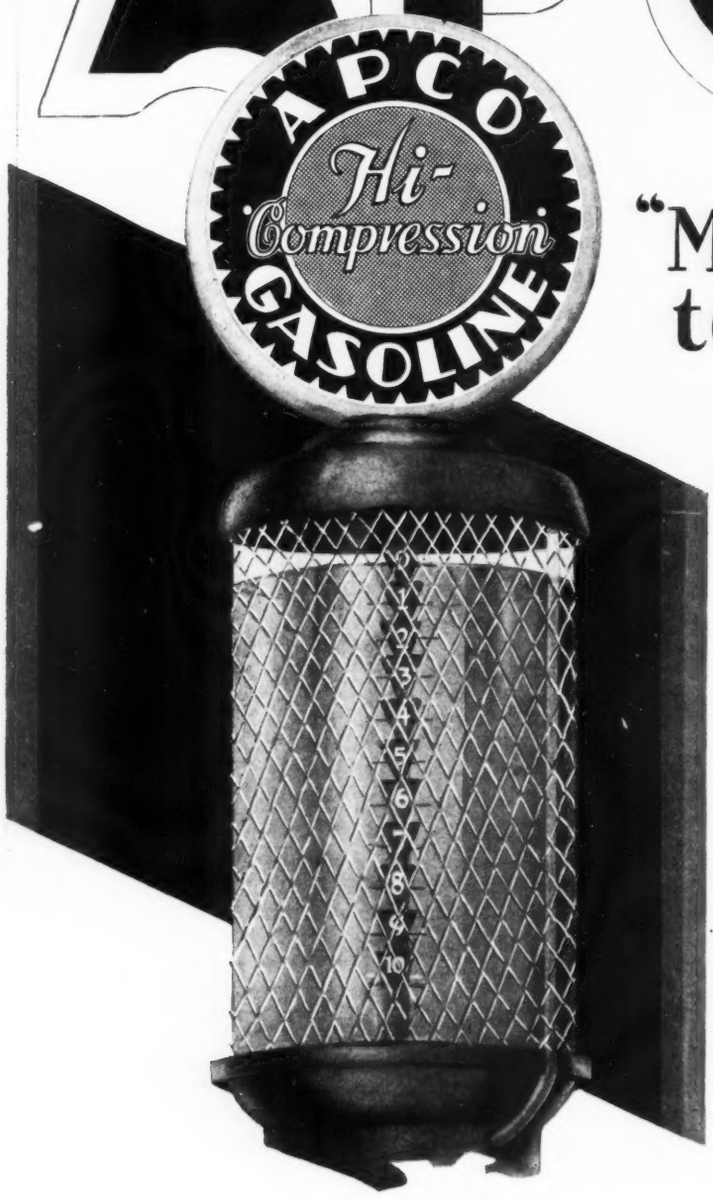
Kwart Kwick Dep't
VIKING PUMP CO.
Cedar Falls, Iowa

MAIL TODAY

Viking Pump Co., Dep't. B
Please send details and prices on your Kwart Kwick Pump.

Name.....
Town.....
State .....

APCO



"More POWER to you". . . . .

APCO HI-COMPRESSION GASOLINE combines high test and "anti-knock" virtues with reasonable premium cost. After exhaustive tests, we now offer the new APCO—made at Cyril, Oklahoma—with high gravity, low endpoint, and extra high benzol equivalent. APCO is a high test, "anti-knock" motor fuel, available in either red or water-white. APCO means "more power to you."

Write immediately for full specifications and details of our marginal contract over 1930 and our sales-building merchandising plan. It means more business—more profits.

OUR OTHER REFINED PRODUCTS

We offer APCO SUPER KEROSENE—with high gravity, low endpoint, low flash, water-white, excellent burning test—the all-purpose product. Protect yourself now against your spring kerosene requirements.

We manufacture a complete line of industrial naphthas, including the nationally known STOD-SOL cleaning solvent.

We provide a complete family of petroleum products, backed by our service guarantee and marginal protection. In making 1930 plans, you owe it to your business to get in touch with us.

ANDERSON-PRICHARD OIL CORPORATION

PRODUCER'S REFINERS

OKLAHOMA CITY, OKLA.

Crude Oil Prices (in Effect May 12, 1930)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

(All Penna. Grade Crude Effective May 1, 1930)

†Bradford—Alleghany district $2.75
Bradford District Oil in New York Transit Lines (Bradford District) ..... ††$2.50
Bradford District Oil in National Transit Lines (Bradford District) ..... ††2.50
Penna. Grade Oil in National Transit Lines (Other Pennsylvania) *2.55
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania) 2.50
Penna. Grade Oil in Eureka Pipe Lines (West Virginia) 2.40
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district) 2.20
Wayne district crude in Cumberland lines (West Virginia) (Effective Apr. 11, 1930) ... 1.34
Corning Grade in Buckeye Pipe Lines (Ohio) (Effective May 2, 1930) 1.75
Somerset Oil in Cumberland Pipe Lines (Kentucky) (Effective Apr. 11, 1930) 1.47
Somerset Oil in Eureka Pipe Lines (Effective Apr. 11, 1930) 1.31
Ragland Grade in Cumberland Pipe Lines (Kentucky) (Effective Jan. 29, 1929) $0.60

*Oil run prior to July 1, 1929 is $2.50 per bbl.
†Posted by Tide Water Pipe Co., Ltd.
††Oil run prior to July 1, 1929 is $2.45 per bbl.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines (Effective Apr. 18, 1930) $1.55

MICHIGAN

(Posted by Dixie Oil Co.)

Traverse and Dundee (Muskegon), effective April 16, 1930, same gravity and price schedule as Prairie posts in Oklahoma and Kansas, which see below.

(Posted by Pure Oil Co.)

Midland, Midland County (April 29, 1930) ... $1.35

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective Apr. 11, 1930

Wooster	$1.80	Princeton	$1.65
Lima	1.70	Illinois	1.65
Waterloo	1.20	Plymouth	1.23
Indiana	1.47	West Kentucky	1.55

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia $2.10
Oil Springs 2.17

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma and Kansas)

Effective Apr. 10, 1930

Below 25	$0.75	35-35.9	$1.255
25-25.9	0.80	36-36.9	1.29
26-26.9	0.85	37-37.9	1.325
27-27.9	0.90	38-38.9	1.36
28-28.9	0.95	39-39.9	1.395
29-29.9	1.00	40-40.9	1.43
30-30.9	1.05	41-41.9	1.465
31-31.9	1.10	42-42.9	1.50
32-32.9	1.15	43-43.9	1.535
33-33.9	1.185	44 and above	1.57
34-34.9	1.22		

(In North Texas: Ranger, Wichita Falls, Mexia)

Effective Apr. 10, 1930

Below 25	$0.72	30-30.9	$1.02
25-25.9	0.77	31-31.9	1.07
26-26.9	0.82	32-32.9	1.12
27-27.9	0.87	33-33.9	1.17
28-28.9	0.92	34-34.9	1.22
29-29.9	0.97	35-35.9	1.255
36-36.9	$1.29	41-41.9	$1.465
37-37.9	1.325	42-42.9	1.50
38-38.9	1.36	43-43.9	1.535
39-39.9	1.395	44 and above	1.57
40-40.9	1.43		

The Texas Co., same schedule in Oklahoma as Prairie in Oklahoma; and in North Texas, North Central Texas and Central Texas as Prairie and Humble in North Texas, effective Apr. 10.

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

Humble's prices in above fields same as Prairie's prices in North Texas, effective Apr. 10, which see.

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

Below 26	$0.70	28-28.9	$0.88
26-26.9	0.76	29-29.9	0.95
27-27.9	0.82	30-30.9	1.02

Rest of Magnolia schedule up to 44 and above same as Prairie in Oklahoma and Kansas.

Apr. 10, 1930, Glasscock, Crane, Upton, Winkler, Howard and Mitchell Counties same prices as Humble's postings in Winkler, Crane, etc., which see

Corsicana heavy	$0.80
Luling	0.85
Mirando	0.85
Darst Creek, 60° F. gravity	1.15

Carter Oil Co.

(Oklahoma and Kansas)

Apr. 10, 1930, same schedule as Prairie, which see.

PANHANDLE TEXAS

Humble Oil & Refining Co.

Effective Apr. 10, 1930

Hutchinson and Carson Counties:

Below 32	$0.775	38-38.9	$1.065
32-32.9	0.825	39-39.9	1.10
33-33.9	0.875	40-40.9	1.135
34-34.9	0.925	41-41.9	1.17
35-35.9	0.96	42-42.9	1.205
36-36.9	0.995	43-43.9	1.24
37-37.9	1.03	44 and above	1.275

Gray County:

Below 29	$0.755	37-37.9	$1.16
29-29.9	0.805	38-38.9	1.195
30-30.9	0.855	39-39.9	1.23
31-31.9	0.905	40-40.9	1.265
32-32.9	0.955	41-41.9	1.30
33-33.9	1.005	42-42.9	1.335
34-34.9	1.055	43-43.9	1.37
35-35.9	1.09	44 and above	1.405
36-36.9	1.125		

Wheeler County: Posted by Magnolia Pet. Co. Humble withdrew Wheeler county postings Apr. 10.

Below 30	$0.755	37-37.9	$1.11
30-30.9	0.805	38-38.9	1.145
31-31.9	0.855	39-39.9	1.18
32-32.9	0.905	40-40.9	1.215
33-33.9	0.955	41-41.9	1.25
34-34.9	1.005	42-42.9	1.285
35-35.9	1.04	43-43.9	1.32
36-36.9	1.075	44 and above	1.355

Above prices met by The Texas Co. and Magnolia on Apr. 10.

WEST TEXAS AND NEW MEXICO

Humble Oil & Refining Co.

Effective Apr. 10, 1930

Winkler, Crane, Upton, Crockett, Ector, and Pecos Counties, also Lea County, N. Mex.

Below 25	$0.65	31-31.9	$0.86
25-25.9	0.68	32-32.9	0.89
26-26.9	0.71	33-33.9	0.92
27-27.9	0.74	34-34.9	0.95
28-28.9	0.77	35-35.9	0.98
29-29.9	0.80	36 and above	1.01
30-30.9	0.83		

Howard and Glasscock counties:

Effective Apr. 10, 1930

Below 25	$0.65	31-31.9	$0.82
25-25.9	0.68	32-32.9	0.84
26-26.9	0.71	33-33.9	0.86
27-27.9	0.74	34-34.9	0.88
28-28.9	0.76	35-35.9	0.90
29-29.9	0.78	36 and above	0.92
30-30.9	0.80		

Apr. 10, 1930, The Texas Co. posted same prices in Crane, Upton, Winkler and Lea counties as Humble.

SOUTH AND SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)

Effective Apr. 10, 1930

Mirando	$0.85
Salt Flat	1.15
Darst Creek	1.15
Pettus, Bee County	1.40

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto, and Sabine.

Effective Apr. 11, 1930

Below 28	$0.87	36-36.9	$1.29
28-28.9	0.92	37-37.9	1.325
29-29.9	0.97	38-38.9	1.36
30-30.9	1.02	39-39.9	1.395
31-31.9	1.07	40-40.9	1.43
32-32.9	1.12	41-41.9	1.465
33-33.9	1.17	42-42.9	1.50
34-34.9	1.22	43-43.9	1.535
35-35.9	1.255	44 and above	1.57

Cotton Valley, Sarepta and Carterville below 36 $0.85. Rest of schedule same as Caddo, Homer, etc.

Smackover, below 24	$0.90
do 24 and above	1.05
Bellevue (Apr. 11, 1930)	1.15
*Urania, La. (Apr. 11, 1930)	0.95
†East El Dorado (Calion) (Apr. 11, 1930)	0.90

*Posted by Louisiana Oil Refining Corp.
†Posted by Magnolia Petroleum Co.

Apr. 10, 1930, The Texas Co. same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.67; 25-25.9, $0.72; 26-26.9, $0.77; 27-27.9, $0.82.

Apr. 11, Magnolia met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Lousiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective Apr. 11, 1930

Below 28	$0.76	30-30.9	$0.91
28-28.9	0.81	31-31.9	0.96
29-29.9	0.86	32 and above	1.01

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective Apr 10, 1930

Grades A	$1.15	34-34.9	$1.30
Grades B:		35-35.9	1.33
Below 25	1.00	36-36.9	1.36
25-25.9	1.03	37-37.9	1.39
26-26.9	1.06	38-38.9	1.42
27-27.9	1.09	39-39.9	1.44
28-28.9	1.12	40-40.9	1.46
29-29.9	1.15	41-41.9	1.48
30-30.9	1.18	42-42.9	1.50
31-31.9	1.21	43-43.9	1.52
32-32.9	1.24	44 and above	1.54
33-33.9	1.27		

Refugio county (rest of schedule, same as Grades B, which see above).

Below 25	$0.85		
25-25.9	1.03		

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Humble, Pierce Junction, Sugarland and Raccoon Bend. All other fields are Grades A only.

Specifications for Grade "A" crude: Gravity: 25° and below, at 60° F; Viscosity: not less than 100 seconds at 100° F Saybolt.
Sulfur: not over .4%.

Grade "B" includes all Coastal crude which does not meet the test for "A" grades.

Crude Price Changes

CHICAGO—On April 16 the Dixie Oil Co., subsidiary of Standard of Indiana, posted the same gravity and price schedule on Traverse and Dundee, Mich. crudes as Prairie posted in Oklahoma and Kansas on April 10.

The schedule begins with below 25 gravity at 75 cents per barrel up to maximum grade of 44 and above, which is $1.57 per barrel.

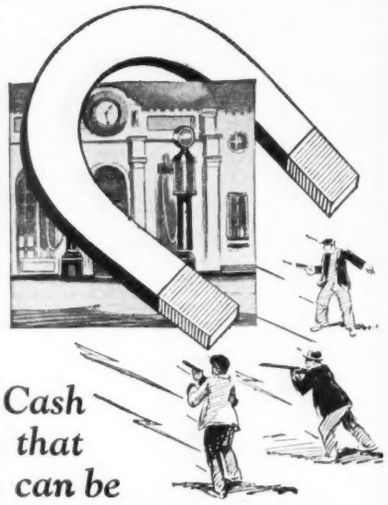
This price change has not been reflected in the crude price table of NATIONAL PETROLEUM NEWS until this issue.

Prairie Pipe Line Deliveries

TULSA, May 8.—Deliveries of the Prairie Pipe Line Co. to customers in April totalled 5,575,389.39 barrels, a daily average of 185,846.31 barrels. This is 8,397.96 barrels less on daily averages than the March deliveries when a total of 6,114,572.43 barrels were delivered.

EXPORTS FROM TAMPICO DISTRICT

Company	February	March
Huasteca Petroleum Co. (Pan American)	357,699	541,675
Mexican Eagle Oil Co. Ltd. (El Aguila)	651,761	998,826
Sinclair Mexican Companies	194,246	183,606
Empire Gas & Fuel Co.	112,080	174,220
The Texas Co. of Mexico, S. A.	163,264	26,172
Mexican Gulf Oil Co.	96,038	42,480
New England Fuel Oil Co.	73,271	.....
Panuco Boston Oil Co.	.....	39,659
Cia. Petrolera "Titania" S. A.	.....	78,137
Totals	1,648,359	2,084,775



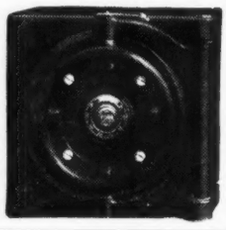
Cash that can be stolen is a magnet!

It draws the burglar and hold-up man just as irresistibly as the loadstone draws steel filings.

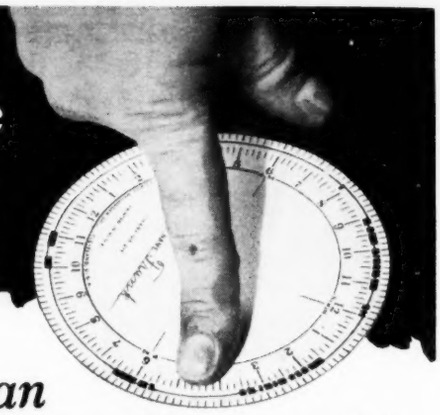
The York Burglary Chest—the result of nearly half a century in expert safe construction—will bring to your service station the protection needed.

YORK SAFES

YORK SAFE *and* LOCK COMPANY
York, Pa.



The Truck Stood Idle 1 hr. and 55 min.



And You Can Put Your Finger Right on It!

THE SERVIS RECORDER
"Keeps Trucks Busy"

Now for the first time, perhaps, you feel you are ***in control*** of that tank truck!

No more "hunches," no more suspicions, no more unfounded accusations, ***no more arguments about delays—***

Just quiet facts, which everybody respects—shown right on the chart.

We ask you, now isn't that the best way to manage tank trucks?

Write for Bulletin—"Ten Methods of Getting More Work Out of Trucks."

Write for Booklet X

THE SERVICE RECORDER COMPANY
Cleveland, Ohio, U. S. A.

TANKS, BARRELS, PUMPS, EQUIPMENT

THE following is a partial list of the products which we are regularly supplying to the oil trade. Do not hesitate to send us your inquiry on any special weight or out of the ordinary equipment or any other special steel plate construction:

Field Tanks, up to 55,000 barrels
Bulk Storage Tanks and equipment complete
Fuel Oil Tanks, all types and sizes
Truck Tanks, oval, round, square, or semi-rectangular
Fuel Oil Truck Tanks, insulated and with heating arrangement
Lubricating Oil Plants, including complete compounding equipment
Grease and Soap Kettles, steam jacketed, with air or mechanical agitator
Steel Drums, complete line
Rotary and Plunger Type Pumps, valves, and fittings

BROWN SHEET IRON & STEEL CO.

964 Berry Avenue **St. Paul, Minn.**

Canadian Associate: Canadian Brown Steel Tank Co., Ltd., Brandon, Manitoba

Tear off this Coupon and Mail it *Today*

Interested in.....

Size..... Truck.....

Other Equipment.....

Name.....

Address.....

Crude Oil Prices (in Effect May 12, 1930)

(Prices are per barrel at the well)

(Crude Oil Prices for the whole year in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective Apr. 10, 1930

Grades A.....$1.15 *Grades B.....$1.00

*Grades B include all heavy crudes which do not meet tests for Grades A or for Grades B light crude. Prices for Grades B light crude are the same as Humble's, which see.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Apr. 10, 1930)

‡Salt Creek 29–29.9	$1.00
" " 30–30.9	1.05
" " 31–31.9	1.10
" " 32–32.9	1.15
" " 33–33.9	1.185
" " 34–34.9	1.22
" " 35–35.9	1.255
" " 36–36.9	1.29
" " 37 and above	1.325
Elk Basin	1.55
Grass Creek light	$1.55
Big Muddy	1.38
Lance Creek	1.63
Rock Creek	1.35
Mule Creek	1.20
Rex Lake	1.10
‡Osage	1.63
‡Cat Creek, Mont.	1.55
Sunburst, Mont.	1.65
‡Hogback, N. Mex.	1.40
Artesia, N. Mex.	1.05

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

Standard Oil Co. of California

(Effective March 11, 1930)

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach Inglewood* Olinda-Brea Canon*	Athens Rosecrans Domingues	Elwood Terrace	Torrance Richfield	Whittier La Habra	Montebello	Coyote	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elk Hills Buena Vista Hills Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Orcutt (Santa Maria) (Union Oil Co.)	Santa Paula (Ventura) (Union Oil Co.)	Ventura Avenue (Associated Oil Co.)
14–14.9**	$0.70	....	....	$0.70	$0.70	$0.70	$0.70	....	$0.55	$0.55	$0.55	$0.55	....	$0.55	$0.70	$0.70
15–15.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55		.55	.70	.70
16–16.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	$1.65	.55	.70	.70
17–17.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	for	.55	.70	.70
18–18.9	.76	....		.76	.76	.71	.76	....	.55	.62	.62	.62	55°	.65	.75	.76
19–19.9	.82	....		.82	.82	.77	.82	....	.55	.70	.70	.70	gravity	.70	.80	.82
20–20.9	.88	....		.88	.87	.83	.87	....	....	.78	.78	.78	and	.78	.85	.88
21–21.9	.94	....		.94	.93	.90	.93	.92	....	.86	.86	.86	over	.90	.90	.91
22–22.9	1.00	....	....	1.00	.98	.97	.98	.95	....	.94	.94	.94	....	.95	.97	.94
23–23.9	1.07	....	....	1.07	....	1.05	1.04	1.01	....	1.02	1.02	1.02	....	1.02	1.05	1.00
24–24.9	1.14	1.14	....	1.14	....	1.11	1.10	1.07	....	1.09	1.07	1.07	....	1.10	1.08	1.07
25–25.9	1.21	1.19	....	1.21	....	1.17	1.16	1.13	....	1.16	1.12	1.12	....	1.18	1.13	1.14
26–26.9	1.28	1.24	....	1.28	....	1.23	1.23	1.19	....	1.23	1.17	1.17	....	1.26	1.18	1.21
27–27.9	1.35	1.29	....	1.35	....	1.29	1.30	1.25	....	1.30	1.23	1.22	....	....	1.23	1.28
28–28.9	1.42	1.34	....	1.42	....	1.35	1.37	1.31	....	1.35	1.27	....	....	....	1.28	1.35
29–29.9	1.46	1.39	....	†1.46	....	1.38	1.41	1.37	....	1.41	1.31	....	....	....	1.33	1.39
30–30.9	1.50	1.45	....	†1.50	....	1.41	1.45	1.43	....	1.47	1.35	....	....	....	1.39	1.43
31–31.9	1.55	1.51	....	....	....	....	....	1.49	....	1.53	1.39	....	....	....	1.45	1.48
32–32.9	1.60	1.57	....	....	....	....	....	1.55	....	1.59	1.43	....	....	....	1.51	1.53
33–33.9	....	1.64	....	....	....	....	....	1.60	....	1.65	1.47	....	....	....	1.58	1.59
34–34.9	....	1.71	1.32	....	....	....	....	1.65	....	††1.71	1.51	....	....	....	....	1.65
35–35.9	....	1.78	1.39	....	....	....	....	1.70	....	††1.77	1.55	....	....	....	....	1.71
36–36.9	....	1.84	1.46	....	....	....	....	1.75	....	....	....	....	....	....	....	....
37–37.9	....	1.90	1.53	....	....	....	....	1.80	....	....	....	....	....	....	....	....
38–38.9	....	1.96	1.60	....	....	....	....	1.85	....	....	....	....	....	....	....	....
39–39.9	....	2.02	1.66	....	....	....	....	1.90	....	....	....	....	....	....	....	....
40–40.9	....	2.08	1.72	....	....	....	....	....	....	....	....	....	....	....	....	....
41–41.9	....	2.14	1.78	....	....	....	....	....	....	....	....	....	....	....	....	....
42–42.9	....	2.20	1.84	....	....	....	....	....	....	....	....	....	....	....	....	....

*Inglewood prices run only to 28.9 gravity; Olinda-Brea Canon to 31.9 gravity.
†Richfield crude only. ††These two grades apply on Lost Hills only.
**Standard does not contract for crude testing below 14 gravity, but pays 45c per barrel when purchased

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	May 12	May 5
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.55	$1.55
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums cwt.	$0.80	$0.80
Sal Soda wks.	$1.00–1.05	$1.00–1.05
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.	$18.50	$18.50
Sulfur, flowers of cwt.	$3.10–4.00	$3.10–4.00
Liquid Chlorine, tank cars, wks. lb.	3.50–5.00	3.50–5.00

Compounders' Supplies

	May 12	May 5
Vegetable Oils		
Linseed carloads, spot lb.	14.20	14.20
Tanks, spot	13.40	13.40
Soya Bean, Tank, coast, lb.	9.50	9.50
Oleic Acid		
Distilled, tanks lb.	9.25–9.50	9.25–9.50
Distilled, bbls. lb.	10.125–10.375	10.125–10.375
Saponified, tanks lb.	9.25	9.25
Saponified, bbls. lb.	10.125–10.625	10.125–10.625
Lard Oils		
Prime Winter Strained lb.	13.25	13.25
Extra Winter Strained lb.	11.75	11.75
Extra lb.	11.50	11.50
Extra No. 1 lb.	11.00	11.00
No. 1 lb.	10.50	10.50
No. 2 lb.	10.25	10.25
Tallow oil lb.	10.00	10.00
Neatsfoot Oil		
Pure, bbls. lb.	13.00	13.00
Extra, bbls. lb.	11.25	11.25
No. 1 bbls lb.	11.00	11.00
Cold Pressed lb.	17.50	17.50
Fish Oils		
Menhaden Oil		
Light Pressed gal.	63–65	63–65
Light Pressed, tank cars, N. Y. gal.	53	53
White bleached gal.	67	67
Yellow bleached gal.	61	61
Whale, extra winter bleached, gal.	85	85
Naval Stores		
Steam, distilled turpentine, N. Y. gal.	42	46
Steam distilled turpentine, Savannah gal.	38	43
Gum turpentine, N. Y. gal.	50	52
Gum turpentine, f.o.b. cars Savannah gal.	44	46
Wood Rosin, N.Y. gal.	$6.26	$6.60
Wood Rosin F, Savn'h bbl.	$5.50	$5.80
Gum Rosin B, N. Y. bbl.	$6.35	$6.60
Gum Rosin B, f.o.b. cars Savannah bbl.	$5.65	$5.90
Rosin oil, pure gal.	57	58
Rosin oil, compounded gal.	50	53
Pine Tar		
Kiln burnt bbl.	$13.00–14.00	$13.00–14.00
Retort bbl.	$13.50–14.50	$13.50–14.50
Alcohol		
Denatured Formula 5, in bbls., per gal.	50–54	50–54

OIL STOCKS AND FINANCES

National Petroleum News

Phillips Finances Expansion With $21,000,000 Stock Issue

CLEVELAND, May 10

PHILLIPS PETROLEUM CO. is financing its expansion program with a subscription of 675,709 shares which are being offered stockholders of May 15 record at $32 a share. The stock has been selling around $40. Subscription rights expire June 16. The new stock will not be delivered until after June 11 and will not participate in the dividend declared payable June 30.

The stock issue, which has been underwritten, will bring into the Phillips treasury $21,622,688. Besides reimbursing the company's treasury for recent expansion expenditures, proceeds will be used to increase its activities in the manufacturing, transporting, marketing, and gas and utilities divisions, the company announced. No mention was made of the producing division.

Frank Phillips, president, made this following statement concerning the company's operations:

"The partial development of this program which has been accomplished up to the present time has shown very gratifying results. The income of the company having become so diversified that more than 50 per cent of net earnings in 1930 were derived from activities other than production of crude oil. Completion of the program contemplates additional refining capacity, continued growth of natural gasoline manufacture, extension of pipe lines for transportation of natural gas, crude oil and refined products, acquisition and construction of additional market outlets and the further development of Philfuels Co., a wholly owned subsidiary marketing Philgas for domestic use and other gases for industrial and manufacturing purposes.

"Briefly illustrative of the company's progress under this program are the following: Gross oil production in 1929 was 15,696,732 barrels as compared to 14,668,881 barrels in 1928. Although the general condition of other supply throughout the industry necessitated co-operative curtailment programs which prevented full production from the company's properties, our potential production is showing a marked increase. Natural gasoline production in 1929 was 219,774.000 gallons as compared with 187,589,000 gallons in 1928 and 1930 will show a much greater gain.

"The refinery division increased its runs to stills 46 per cent in 1929 but its output did not keep pace with the growth in demand for Phillips '66' gasoline and other products, sales of which increased from 10.474,000 gallons in 1928 to 60.082,000 gallons in 1929. Present retail sales of these products are at the rate of 150,000,000 gallons a year.

"The gas division is an important and constantly increasing source of revenue. Sales of natural gas in 1929 were 171 billion cubic feet as compared to 118 billion cubic feet in 1928 and your company with its immense gas reserves is participating in important projects for transporting natural gas to new markets which will largely increase its sales. Retail sales of Philgas, a fuel for domestic use are multiplying many times as it is made available in a constantly increasing number of districts. Sales of domestic gas fuel at wholesale increased 186 per cent and various gas fuels for industrial and manufacturing purposes gained from forty to seventy-five per cent in 1929 over 1928.

"As of April 15, after giving effect to the net proceeds from this new issue, net cash and other current assets were approximately $40,000,000 or considerably more than the entire funded debt. The statement also reflects over $194,000,000 invested in the properties against which a reserve of over $78,000,000 has been set up.

"Your company is in the best position of its history to take advantage of the improved economic condition of the oil industry. In establishing it there it has been necessary to invest a large part of current earnings in expanding existing properties and developing new ones. It is the purpose of the directors, in offering stockholders this opportunity to increase their holdings twenty-five per cent at this low price, to pass on to stockholders in a substantial way a portion of the tangible and intangible values heretofore created.

"The offering to stockholders has been underwritten by a group headed by Bancamerica-Blair Corp. and Chatham Phenix Corp."

PETROLEUM
AND
TRADING
CORPORATION

CLASS A STOCK

BOUGHT—SOLD—QUOTED

CARL H. PFORZHEIMER & CO.
Specialists in Standard Oil Securities
25 Broad Street New York
Phone HANover 5484

S. O. Nebraska Workers Get 9914 Shares

OMAHA, Neb., May 9.—Standard Oil Co. of Nebraska May 3 distributed 9114 shares of stock to employes who had bought it under the company's stock purchase plan. The stock had a market value of approximately $440,000.

The Nebraska company's sales in 1929 amounted to $12,452,955, according to A. H. Richardson, president. Expenditures included:

Payroll, $1,755,214; freight, $1,428,426; inspection fees and gasoline tax, $1,638,700, and federal, state and local taxes $252,463.

The company received last year about 98 per cent of its merchandise from Wyoming refineries.

One for Every Car
Easy To Put On
Cannot Be Lost
Rattle-Proof
Leak-Proof

Get a bigger "Thank You" from your customers

HAVE a new gas tank cap ready for the fellow who drives in without one. That's the sort of service that wins a bigger "thank you" from your customers; that wins new friends; helps keep the old ones.

There's a handsome profit in each sale, too, if you sell Monmouth Gas Tank Caps. No sales effort necessary; an attractive display board with a cap for every car, posted in a conspicuous place, does the work for you.

Clip the Coupon Now—Get Ready to Build Goodwill and Increase Profits

THE EATON BUMPER & SPRING SERVICE CO.
Cleveland, Ohio

Warehouse stocks carried at Eaton Branches in Atlanta, Boston, Chicago, Cleveland, Dallas, Denver, Kansas City, Philadelphia

USE THE COUPON!

The Eaton Bumper & Spring Service Co.
E. 65th and Central, Cleveland, Ohio
Give us more information on Monmouth Gas Tank Caps

Name _____

Street _____

City _____

Transactions in Oil Shares on New York Stock Exchange

1929 High	1929 Low	1930 High	1930 Low	Listed Shares	Par Value	Company	Div. Rate	Last Paid	Transactions Week Ended May 10 Sales	First	High	Low	Last	Change
42⅜	17½	42¼	20½	922,075	N.P.	Amerada Corp.	50cQ	Apr. 30, 30	22,400	24⅛	25¾	†20½	25	+ ⅝
64¾	12½	37	20½	209,180	N.P.	American Republics Corp.	....	.....	7,900	20½	27⅜	20½	25⅞	+ 4¾
47¼	34½	50¼	32½	2,240,000	$25	Associated Oil	50cQ	Mar. 31, 30	.....	....	....	....	....	.....
77⅞	30	51⅜	36¼	2,683,868	25	Atlantic Refining Co.	‡25cQ	Mar. 15, 30	22,000	39¼	43	38	43	+ 3
49⅛	20	34	20½	2,257,108	25	Barnsdall Corp. A.	50cQ	May 7, 30	57,000	25⅜	27½	24	27	+ 2¾
34½	25	29⅝	28	2,060,966	25	California Petroleum Corp.	....	Jan. 1, 29	40	29⅝	*29⅝	29⅝	29⅝	+ 1⅝
32⅞	12½	20⅜	13	1,444,970	N.P.	Colonial Beacon Oil Co.	....	.....	1,300	17	17⅜	16½	17	— 2
37¾	18	30½	19½	4,610,258	N.P.	Continental Oil (Delaware)	....	.....	102,200	24¼	26¾	22⅛	26¼	+ 2¼
94¾	42¼	71⅛	49½	410,857	$100	General Asphalt Co.	$1Q	Mar. 15, 30	16,300	53⅜	56⅜	52¾	56⅜	+ 2⅜
109	26	116⅞	52¼	250,000	100	Houston Oil	....	.....	104,600	86	98	75½	97½	+ 8½
39⅜	17¾	32	20¼	1,379,295	N.P.	Independent Oil & Gas	50cQ	Apr. 30, 30	35,900	22⅛	26½	22⅛	26¼	+ 2¼
53	13⅜	28⅜	16	699,066	10	Indian Refining	....	Dec. 15, 20	96,000	16	21¼	16	19½	+ 3½
51¼	11½	27¾	15½	568,816	10	do certificates	....	.....	22,000	15⅜	19⅜	15⅛	18	+ 2½
38⅜	16½	26½	21¼	3,994,150	N.P.	Lago Oil & Transport	....	Aug. 2, 27	3,100	23⅛	24⅛	23⅛	24⅛	+ ⅛
18	7	12	8	1,187,701	N.P.	Louisiana Oil Refining	....	.....	7,200	9	10¼	9	10	— ¼
100¼	80	89¼	84	40,000	$100	do pfd.	$1.62½Q	May 15, 30	10	84½	84½	84½	84½	+ 1⅛
18½	5⅞	10⅜	5⅛	330,000	N.P.	Maracaibo Oil Exploration	....	.....	200	7½	7½	6½	6½	+ ¼
295	176	179	176	459,428	$100	Mexican Petroleum	$3Q	Apr. 21, 30	10	179	*179	179	179	+ 3
105	102	....	....	120,000	100	do pfd.	$2Q	Apr. 21, 30	.....	....	....	....	....	.....
69⅜	9¼	37	16⅛	1,244,383	N.P.	Mexican Seaboard Oil	....	Oct. 15, 24	145,800	22½	28⅜	22½	27½	+ 5½
39⅞	22⅛	33	23½	1,899,138	N.P.	Mid-Continent Petroleum	50cQ	May 15, 30	41,700	27¾	28¾	25½	28½	— ⅜
3⅝	¾	2½	⅞	908,171	N.P.	Middle States Oil ctfs.	....	.....	5,400	1½	1¾	1½	1⅝	0
1½	⅝	1¼	1	3,500,000	N.P.	Pacific Oil stubs	....	.....	.....	....	....	....	....	.....
69	40¼	60⅛	51⅝	1,000,000	$50	Pan American Petrol. & Trans.	....	Oct. 20, 27	.....	....	....	....	....	.....
69¼	40½	63¾	50½	2,422,221	50	do B	....	Oct. 20, 27	13,200	56¼	61½	55	61	+ 2¾
15¼	3	11⅞	4⅛	199,370	N.P.	Panhandle Prod. & Refg.	....	.....	7,800	9⅛	10⅞	9	10½	+ 1
76	47½	75	47½	25,666	$100	do pfd.	....	July 2, 23	900	69	*75	69	75	+13
47	24¼	44¾	29⅜	2,670,089	N.P.	Phillips Petroleum Co.	50cQ	Apr. 1, 30	90,800	39⅛	41½	38⅜	41⅜	+ 1⅝
3⅜	1	2½	1	1,184,917	$25	Pierce Oil Corp.	....	.....	16,300	2	2⅜	1⅞	2¼	+ ⅛
51½	20	52	20½	150,000	100	do pfd.	....	Feb. 1, 22	8,700	45⅛	50¾	40	49⅞	+ 4¾
5⅞	½	7⅛	2¼	2,500,000	N.P.	Pierce Petroleum Corp.	....	.....	47,300	5½	6⅝	5¼	6⅝	+ 1⅛
65⅝	40½	54	45	2,435,670	$25	Prairie Oil & Gas Co.	50cQ	Mar. 31, 30	3,300	46½	49	45⅜	47½	+ ⅞
65	45	60	50¼	4,050,000	25	Prairie Pipe Line Co.	‡75cQ	Mar. 31, 30	11,100	54	54	†50¼	52	— 1⅜
25⅞	4	11⅞	6½	749,017	50	Producers & Refiners Corp.	....	Sept. 15, 30	5,600	8	8½	7⅝	8⅜	+ ¼
46¾	25½	35	35	56,907	50	do pfd.	....	May 4, 25	200	35	*35	†35	35	0
30¾	20	27¼	21⅛	3,038,370	25	Pure Oil Co.	37½cQ	Mar. 1, 30	29,500	23⅜	24	22¼	22¾	+ ¼
116	108	114¼	110½	130,000	100	do 8% pfd.	$2Q	Apr. 1, 30	280	112½	114	†110½	114	+ 1
49⅝	22⅝	28¼	20⅝	2,101,550	25	Richfield Oil (California)	50cQ	May 15, 30	29,500	22½	24½	†20⅝	23½	+ ½
42½	15	25⅜	16½	1,235,270	N.P.	Rio Grande Oil Co.	50cQ	Apr. 25, 30	31,400	20⅛	22¼	19⅛	22	+ 2
64	43⅛	56¼	49¼	951,310	$13.40	Royal Dutch (N. Y. shares)	$1.3415	Feb. 15, 30	8,800	52⅛	53½	51⅛	52¾	+ ⅛
55¾	43⅜	48⅜	42⅜	77,492	£2	Shell Transp. & Trading	97c	Jan. 28, 30	20	45¼	45¼	45¼	45¼	— ¾
31¾	19	25½	20⅛	13,069,076	N.P.	Shell Union Oil Corp.	35cQ	Mar. 31, 30	27,700	21⅞	23⅛	†20⅛	22¾	+ ⅜
....	....	106¼	100	400,000	100	do pfd.	$1.37½Q	Apr. 1, 30	1,800	104	105	104	104½	+ ½
40⅛	15	37	22⅞	869,255	10	Simms Petroleum Co.	40cQ	Mar. 15, 30	20,500	27	28½	26¾	27¾	— ⅛
45	21	32	21⅜	5,455,665	N.P.	Sinclair Consolidated Oil Corp.	50cQ	Apr. 15, 30	107,800	24¼	27¾	24⅞	27¾	+ 2
111	103	112¼	109	154,685	100	do pfd.	$2Q	May 15, 30	100	110	110	110	110	+ ¼
46½	42	42	28⅞	1,097,650	$25	Skelly Oil Co.	50cQ	Mar. 15, 30	31,600	34¼	36	32	36	+ 1½
....	....	103	98	750,000	100	S. O. Export Corp. pfd.	....	.....	2,500	101	*103	101	103	+ 2
81⅞	51½	75	55½	13,016,434	N.P.	S. O. California	62½cQ	Mar. 15, 30	46,100	67⅛	70½	66⅜	70½	+ 2½
....	....	49	37¼	320,000	$25	S. O. Kansas	50cQ	Mar. 15, 30	18,300	39	43¾	38	42⅞	+ 3¼
83	48	84⅞	58	25,443,643	25	S. O. New Jersey	‡25cQ	Mar. 15, 30	628,100	73	77	71	77	+ 4
48⅛	31¾	40⅜	31¼	17,809,530	25	S. O. New York	40cQ	Mar. 15, 30	100,700	34⅝	37¼	34⅛	36½	+ 2
86⅜	55	70	53	1,416,911	N.P.	Sun Oil Co.	25cQ	Mar. 15, 30	6,500	64⅞	64⅞	60⅞	64⅞	— ⅛
105½	100	105⅛	102½	100,000	$100	do pfd.	$1.50Q	Mar. 1, 30	680	103¾	124½	103¾	104⅜	+ ⅜
24	5¼	9¼	5¼	1,026,979	N.P.	Superior Oil Corp.	....	.....	102,800	6⅝	*9¼	6	9¼	+ 2¼
71⅞	50	60½	50⅝	9,850,724	$25	The Texas Corp.	75cQ	Apr. 1, 30	42,000	55⅛	58	55	57⅞	+ 1⅞
23⅜	9½	14½	8⅞	929,947	10	Texas Pacific Coal & Oil	s2½%	Dec. 31, 29	14,300	9⅜	11⅜	9	11	+ ⅝
23½	10	17¾	10¾	5,881,980	N.P.	Tide Water Associated Oil	30cS.A.	Feb. 15, 30	52,600	14½	15¾	14	15¼	+ ¼
90⅞	74⅛	89¾	78	732,550	$100	do pfd.	$1.50Q	Mar. 31, 30	600	86½	86½	86¼	86¼	— ¾
40	14	31	19½	2,191,820	N.P.	Tide Water Oil Co.	20cQ	Mar. 31, 30	.....	....	....	....	....	.....
97½	85⅛	94⅞	86⅛	199,443	$100	do pfd.	$1.25Q	May 15, 30	1,500	91½	93	90⅞	93	0
....	....	24	16¼	3,339,150	N.P.	Transcontinental Oil	30c	May 1, 30	82,600	18¾	21	17¾	20⅞	+ 1¼
57	42⅛	50	40⅞	2,201,008	$25	Union Oil Co. (California)	‡50cQ	May 10, 30	8,200	43½	46	43½	45½	+ 1
....	....	38½	33	1,254,048	N.P.	Union Tank Car Co.	40cQ	Mar. 1, 30	800	33	33½	31	33	— 1
42⅛	15	27	16⅝	777,603	N.P.	Warner Quinlan Co.	25cQ	Apr. 3, 30	24,600	18⅛	19⅜	17⅛	19⅜	+ 2⅞
38	25	29½	26	490,000	N.P.	White Eagle Oil & Refg.	50cQ	Apr. 20, 30	.....	....	....	....	....	.....
29¾	12⅞	21	11½	428,967	N.P.	Wilcox Oil & Gas Co.	....	May 10, 28	2,000	17½	18	17½	18	— ½

*New high †New low ‡Also extra s-Stock Total sales 2,319,340

Financial Notes

Atlantic Refining Co.—Directors and officers re-elected at annual meeting.

National Transit Co.—Directors and officers re-elected.

Pierce Petroleum Corp.—All directors re-elected.

Standard Oil Co. of Indiana—Business this year is ahead of last year's volume, President E. G. Seubert announced in connection with the declaration of the second quarter dividend. The increase is due, partly, to the consumer acceptance of the company's new products, he said, and also to a general gain in demand for petroleum products.

Swan-Finch Oil Corp.—E. V. Moncrieff was elected president to fill the vacancy caused by death of William G. Moncrieff. E. V. Moncrieff was succeeded as senior vice president by H. F. Moncrieff. D. J. Kenefick was elected a director to fill the vacancy on the board. Other directors and officers were re-elected.

Loreco Offers Stock Rights

CLEVELAND, May 9.—Stockholders of Louisiana Oil Refining Corp. of May 9 record have been issued rights to subscribe to one share of common stock at $11 a share for each 10 shares held. Rights expire May 29.

Warner Quinlan Stock Increase Authorized

NEW YORK, May 10.—Warner Quinlan Co. stockholders have authorized an increase in capital stock from 1,000,000 to 1,500,000 no par shares.

The company has listed 144,655 additional shares on the New York Stock Exchange which will be used in connection of the company's recent offer of subscription rights and for conversion of its 6 per cent debentures.

At the annual meeting directors and officers were re-elected.

Pittsburgh Stock Exchange

Transactions Week Ended May 9, 1930

	Sales	High	Low	Last	Change
Ark. Nat. Gas....	2,330	13½	10⅝	12¾	— ⅜
do pfd.....	225	8	8	8	0
Columbia Gas....	50	74½	74½	74½	0
Devonian Oil....	330	12	11	12	0
Lone Star Gas....	23,405	50	41½	48½	—2⅝
do pfd.....	300	109	107	109	+ ¼
Plymouth Oil....	750	22⅛	†22	22	—2
Salt Creek Cons..	50	2	2	2	0
Shamrock Oil & Gas	15,170	23	20½	22⅜	+1¼
Wiser Oil.....	100	18½	18½	18½	— ½
Leonard Oil.....	1,905	3⅛	2½	2⅞	— ⅝
Petroleum Explor.	90	30	30	30	0
Ohio Oil & Gas...	200	1½	†1½	1½	—3½
Phoenix Oil.....	2,500	.65	.60	.60	0
Shamrock O & G 6s	$2,000	105	105	105	—3
Lone Star rights..	12,025	4¼	4	4⅛	— ¼

†New low.

Pittsburgh Curb Market

Transactions Week Ended May 9, 1930

	Sales	High	Low	Last	Change
Arkansas Gas A..	975	13¼	10¾	12⅝	— ⅞
Gulf Oil.....	400	151	151	151	—13

More Companies Report Income Shrinkage

CLEVELAND, May 12.—Only one company of six whose income reports for the first quarter of 1930 were issued last week, showed larger earnings in that period than in the first quarter of 1929. This company is the Houston Oil Co.

Rio Grande Oil Co.'s income for the quarter, $1,204,265, was only $59,000 less than in the first quarter last year, but earnings of other companies underwent larger declines.

Two of the six companies operated at losses this year as compared with profitable operations the first three months of 1929.

Darby Petroleum Co. and Mexican Seaboard Oil Co. reported last week on their 1929 operations. Darby's income increased from $803,558 to $1,155,582 although the per share earnings fell from $2.07 a share on 388,073 no par shares in 1928 to $1.13 on 1,019,392 no par shares in 1929.

Mexican Seaboard reduced its operating loss from more than $1,330,000 in 1928 to $28,850 last year.

Paragon Plans Financing Of Valvoline Deal

CINCINNATI, May 10.—Plan for the permanent financing of the purchase of Valvoline Oil Co. control by Paragon Refining Co., Toledo, will probably be submitted to Paragon stockholders at a meeting here May 13. A meeting scheduled for May 6 was postponed to perfect the plan which probably will provide for a stock issue.

Last year Paragon bought 32,227 of the 38,600 outstanding shares of Valvoline, one of the oldest refiners of Pennsylvania crude oil, at approximately $200 a share, or a total of $6,432,407, the amount at which the Valvoline investment was carried by Paragon Dec. 31. The purchase was financed by $6,400,000 temporary loans.

Acquisition of control of Valvoline was the largest of three purchases made by Paragon the last two years. In 1928 it bought the Wayco Oil Co. of Detroit, one of the larger gasoline and motor oil distributors there, and last year the service station chain of the Brooks Oil Co. in Cleveland. It did not buy the Brooks compounding business.

Paragon is planning to barge gasoline from its Toledo refinery to lake terminals at Detroit and Cleveland.

The company's gasoline sales last year, it has been announced, amounted to 65,567,947 gallons at its own stations. Its refinery produced 49,892,119 gallons.

Paragon is controlled by Cincinnati capital. E. W. Edwards is president.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

SALESMAN OR JOBBING MANAGER. Eight years experience oil jobbing and carload selling. 33, married, good reference and can give bond. Address Box 477, Findlay, Ill.

Situations Open

SALES REPRESENTATIVES IN VIRginia, Georgia, Louisiana, Iowa, Nebraska, Colorado, & Montana to handle a complete line of high grade valves and fittings for gasoline service stations and oil storage plants. Prefer men acquainted with the major oil companies.

THE OHIO PATTERN WORKS & FOUNDRY CO.
2730 SPRING GROVE AVENUE
CINCINNATI, OHIO

COMMISSION SALESMEN WANTED TO cover all of New York State. Article is a good seller. Can be carried as a side line if desired. Address P. O. Box 611, Erie, Pa.

GRADUATE CHEMIST

or chemical engineer by Mid-Continent Refiner for laboratory and plant development. Must have thorough training in chemistry and experience in testing petroleum products. Give full details concerning age, education, experience, salary expected, snapshot of self and references in application, otherwise will not be considered. Address Chemist.

c/o National Petroleum News,
Tulsa, Okla.

Professional

L. G. Huntley **J. R. Wylie, Jr.**
Shirley L. Mason

HUNTLEY & HUNTLEY
PETROLEUM GEOLOGISTS AND ENGINEERS
Frick Building **PITTSBURGH, PA.**

Miscellaneous

WHAT IT COSTS

"For Sale," "Wanted to Buy," "Help Wanted," "Business Opportunities."

"Miscellaneous" classifications, set in type this size without border—10 cents a word. Minimum charge, $3.00.

"Position Wanted"—5 cents a word. Minimum charge $1.00.

Advertisements set in special type or with border—$4.00 per column inch.

Copy must reach us not later than Friday preceding date of issue.

All advertisements carried on this page are payable in advance.

Wanted to Buy

WANTED TO BUY—TWO OR THREE 3-compartment Columbian three point suspension truck tanks for Ford or Chevrolet trucks. Also cut No. 117, 10 gallon visible Fry gasoline pumps in good condition. Quote price and write us giving all particulars. Elk Oil Company, Fayetteville, Tenn.

WANTED

Small second hand wax caking equipment.
State price and description first reply.
Address Box 537

For Sale

STEEL MOTOR TANK BARGE
For Sale or Charter

240,000 gallons on 8 feet. River and Sound —built 1929. Also steamers and barges to charter.

Rutland's Maritime Exchange,
82 Wall St., New York City

SERVICE STATION WITH BULK STORAGE AT STATION, no transferring. Doing nice tank wagon business with two station accounts. An independent jobber in good business town. Chariton Oil Company, Chariton, Iowa.

FILLING STATIONS FOR SALE

CHAIN OF 6 MODERN UP-TO-DATE GOING STATIONS, AND 3 MORE TO BE COMPLETED. LOCATION—MAIN ARTERIES, UNION COUNTY, NEW JERSEY, THE GATEWAY TO THE WEST. INDEPENDENT EQUIPMENT, TRUCKS, ETC. FOR FULL PARTICULARS WRITE BOX R. C. M., ROOM 1124, 342 MADISON AVENUE, NEW YORK CITY.

Business Opportunities

Phone 43125 *Quotations on request*

C. FRED MERCER, INC.
Commission Buying
Petroleum Products

515 Thompson Bldg. **Tulsa, Oklahoma**

Patent Attorneys

ROYAL E. BURNHAM
Attorney-At-Law

Patent and Trade-Mark Practice Exclusively

Continental Trust Building
Washington, D. C.

Standard Oil Stocks on New York Curb

1929 High	1929 Low	1930 High	1930 Low	Outstanding Shares	Par Value	Companies	Div. Rate	Last Paid	Transactions Sales	Transactions First	Week Ended High	Week Ended Low	Week Ended Last	May 10 Change
18 3/4	13 1/2	18 1/4	12 1/4	.....	£1	Anglo-Amer. Oil voting stk. ctfs..	36c	June 5, 29	200	18	*18 1/4	18	18 1/4	— 1/4
17 1/8	11	19	12	.....	£1	do non-voting stk. ctfs.....	36c	June 5, 29	.....	.....	.....	.....	.....	.....
2 1/2	3/4	1	1/2	500,000	N.P.	Atlantic Lobos Oil.....	....	.....	200	7/8	7/8	3/4	3/4	0
4 1/8	1	1 1/2	1 1/4	200,000	$50	do pfd.....	.....	.....	.....	.....	.....	.....	.....	.....
46 1/2	25	25	20	40,000	25	Borne Scrymser Co.....	$1S.A.	Apr. 15, 30	500	23 3/4	23 3/4	†20	20	— 4 3/4
74 1/4	55	69	57	200,000	50	Buckeye Pipe Line Co.....	$1Q	Mar. 15, 30	400	58 1/4	58 1/4	57	57	— 1 1/4
210	130	184 7/8	155	120,000	25	Chesebrough Mfg. Co.....	‡$1Q	Mar. 31, 30	100	175	175	175	175	— 8
11 3/4	5 5/8	7 1/2	5 5/8	.....	N.P.	Creole Petroleum Co.....	....	.....	8,400	5 7/8	6 3/4	5 3/4	6 3/8	+ 3/8
75 3/4	40	65 3/4	40 1/2	30,000	$ 50	Cumberland Pipe Line Co.....	$1Q	Mar. 15, 30	50	60 1/8	60 1/8	57	57	— 4
70 1/2	42	54 3/4	43	50,000	100	Eureka Pipe Line Co.....	$1Q	May 1, 30	100	44	44	44	44	0
....	....	51 1/2	2 1/2	280,000	N.P.	Galena Oil Corp. w.i.....	....	.....	2,800	5	*5 1/2	4 7/8	5 3/8	+ 7/8
....	....	37 1/4	32	.....	N.P.	General Petroleum Corp. w.i.....	....	.....	100	35	35	34 1/2	34 1/2	— 1 1/2
128	74 1/8	119	78	2,974,645	$25	Humble Oil & Refg. Co.....	50cQ	Apr. 1, 30	14,100	96 1/8	104 3/8	94	104 3/8	+ 5 3/8
41	22	30	22 1/8	26,490,741	N.P.	Imperial Oil, Ltd.....	12 1/2cQ	Mar. 1, 30	3,300	24 1/2	25 3/8	23	24 5/8	+ 3/8
42 1/8	26	41	37	300,000	$10	Indiana Pipe Line Co.....	50cQ	May 15, 30	800	37 1/4	37 1/4	†37	37	— 1/4
29 3/8	15	24	17 7/8	14,247,880	N.P.	International Petroleum Co.....	25c	Mar. 15, 30	20,700	20 1/8	21 1/2	19 1/4	21	+ 1 1/8
25 7/8	10 1/2	22 3/8	18 3/8	509,000	$12 1/2	National Transit Co.....	25cQ	Mar. 15, 30	1,800	18 3/8	19	†18 3/8	19	— 5/8
17 3/4	10	20 1/2	14	100,000	10	New York Transit Co.....	‡40cQ	Apr. 15, 30	.....	.....	.....	.....	.....	.....
63	41	54	37	40,000	50	Northern Pipe Line Co.....	$2S.A.	Jan. 2, 30	100	37	37	37	37	— 5 1/4
79 7/8	64 1/8	74 7/8	66 1/8	2,400,000	25	Ohio Oil Co.....	‡50cQ	Mar. 15, 30	2,500	72	73 3/8	70 3/4	73	+ 1
105 1/2	103 3/4	108	103	600,000	100	do pfd.....	$1.50Q	June 14, 30	1,100	105	*108	105	107 1/2	0
44 1/2	18 5/8	32	20	400,000	25	Penn Mex. Fuel Co.....	$1	Dec. 14, 29	500	23 5/8	25	23 5/8	24	+ 1/4
50	29	33	21 3/8	160,000	25	Solar Refining Co.....	$1.25S.A.	Dec. 20, 29	400	22	22	22	22	— 1/2
23 1/2	13	20 1/8	13	100,000	10	Southern Pipe Line Co.....	$1	Mar. 1, 30	1,400	18 3/4	*20 1/8	18 3/4	20 7/8	+ 1 1/8
60 1/4	35 1/8	45 7/8	37 1/2	1,200,000	25	South Penn Oil Co.....	‡50cQ	Mar. 31, 30	3,100	39	40	38	39 5/8	+ 1/8
70	45	64	50	35,000	50	Southwest Pa. Pipe Lines.....	$1Q	Apr. 1, 30	.....	.....	.....	.....	.....	.....
63	45	59 7/8	49 7/8	16,850,587	25	S. O. Indiana.....	62 1/2cQ	Mar. 15, 30	38,700	52 1/8	54 7/8	52 1/8	54 7/8	+ 3 3/8
46 7/8	29	40 1/2	33 1/4	2,577,124	10	S. O. Kentucky.....	40cQ	Mar. 31, 30	10,800	35	36 5/8	34	36	+ 1/2
50 1/4	40	48 7/8	44 1/8	188,159	25	S. O. Nebraska.....	‡62 1/2cQ	Mar. 20, 30	.....	.....	.....	.....	.....	.....
129	60	108 1/2	81	560,000	25	S. O. Ohio.....	62 1/2cQ	Apr. 1, 30	150	94	94	92	92	+ 2
124 1/2	113 1/2	122	117 5/8	70,000	100	do pfd.....	$1.75Q	Mar. 1, 30	10	119 3/4	119 3/4	119 3/4	119 3/4	+ 3/4
18	5 3/8	10	8	34,158	25	Swan Finch Oil Corp.....	....	Jan. 15, 29	50	8	8	†8	8	— 2
133 3/4	75 1/8	97 7/8	85 7/8	5,139,887	25	Vacuum Oil Co.....	$1Q	Mar. 20, 30	8,100	89 7/8	92 1/8	†85 1/8	89 1/2	— 3/4

*New high †New low ‡Also extra

Independent Oils on New York Curb

1929 High	1929 Low	1930 High	1930 Low	Par Value	Companies	Transactions Sales	Transactions First	Week Ended High	Week Ended Low	Week Ended Last	May 10 Change
.72	1/8	3/8	1/8	$1	Amer. Contr. Oilfields	4,600	1/4	1/4	1/16	1/4	0
8 5/8	1 1/8	4 1/2	1 1/2	5	Amer. Maracaibo....	48,800	3 1/4	4 1/8	3 1/8	4 1/8	+ 5/8
4 3/4	1	1 3/8	1 3/8	10	Argo Oil.....	.....	.....	.....	.....	.....	.....
26	3 3/4	16 3/4	8 3/4	N.P.	Arkansas Nat. Gas...	17,800	10 7/8	13 7/8	10 7/8	13 1/2	+ 1 3/4
24 3/4	6 1/2	16 5/8	8 5/8	N.P.	do Class A.....	99,500	10 1/8	13 3/4	10 1/4	13 3/8	+ 1 7/8
9	4	8 1/8	7 5/8	10	do pfd.....	400	8	8	7 7/8	8	0
70	50	28 1/2	28 1/2	N.P.	* British American Oil..	.....	.....	.....	.....	.....	.....
4 7/8	7/8	2 3/4	3/4	1/4	Carib Syndicate.....	6,100	2 1/4	2 3/8	1 7/8	2	0
68 1/2	20	44 1/4	26 1/2	N.P.	Cities Service.....	454,500	30 1/8	36 1/4	30	36 1/4	+ 5 3/4
99 1/4	84	93 7/8	88	100	do pfd.....	1,800	92	93	90 7/8	92	+ 7/8
9 1/4	8	9	8 1/4	10	do pref. B.....	100	8 1/2	8 1/2	8 1/2	8 1/2	— 3/8
96	81	85	82	100	do pref. BB.....	100	85	*85	85	85	+ 1
1 1/2	1/4	1/16	1/4	1	Colombia Syndicate..	12,500	1/2	*1/16	1/2	1/16	+ 1/16
15	3 7/8	8 1/4	5 1/8	N.P.	Colon Oil Corp.....	2,400	5 3/4	6	5 1/2	5 5/8	— 1/16
.....	.....	21	15 3/4	N.P.	Columbia Oil & Gas...	1,200	15 7/8	16 3/8	15 7/8	16 3/8	+ 5/8
11 1/8	2 1/2	5 7/8	3 7/8	10	Consolidated Royalty	200	4 3/8	4 3/8	4	4	0
135	42	74 3/4	45	N.P.	Cosden Oil Co.....	1,800	49 3/4	56 1/2	†45	56 1/2	+ 6 1/2
87	55	70	61	100	do pfd.....	100	64	64	64	64	— 1
2 1/2	1/4	1	1/4	N.P.	Crown Central Pet...	500	5/8	5/8	5/8	5/8	0
11 3/4	4	....	....	N.P.	Crystal Oil.....	.....	.....	.....	.....	.....	.....
51 1/8	51 1/8	....	....	100	do pfd.....	.....	.....	.....	.....	.....	.....
26	6 1/2	12 7/8	7 1/4	N.P.	Darby Petroleum....	8,400	9 3/8	11 1/8	9 1/8	10 1/8	— 1/8
11	2	11	4 1/2	N.P.	Derby Oil & Refg.....	3,400	7 1/2	9 3/4	6 1/2	9 1/4	+ 1 3/4
44	17	60	30	N.P.	do pfd.....	.....	.....	.....	.....	.....	.....
.....	.....	12	12	10	Devonian Oil.....	.....	.....	.....	.....	.....	.....
209	115	166 7/8	131 1/4	$25	Gulf Oil Corp.....	111,300	145 5/8	153	141 1/4	152	+ 5
7 1/2	1 3/8	4	2 7/8	N.P.	Homaokla Oil.....	400	4	4	4	4	0
....	....	47 1/2	35	N.P.	Indian Territory A..	48,800	40	39 1/2	†35	39	+ 3
....	....	53 1/2	35 1/8	N.P.	do B.....	29,000	39 3/4	40 7/8	†35 1/8	39	+ 2
2 7/8	3/8	1 3/4	3/4	10	Intercontinental Pet..	9,400	1 3/8	1 3/8	1 1/4	1 1/4	0
3 5/8	1 1/4	3	1 7/8	N.P.	Kirby Petroleum....	4,000	2 1/8	2 1/8	2 1/8	2 1/8	0
6 1/8	1	4 3/4	1 1/8	N.P.	Leonard Oil & Dev..	8,300	2 5/8	3 1/4	2	3	+ 3/8
38 7/8	18	29	18 5/8	N.P.	Lion Oil Refg.....	3,100	24	26 3/8	24	26 7/8	+ 2 7/8
67 7/8	28	55 7/8	34 1/8	N.P.	Lone Star Gas.....	45,000	45 1/4	50	43 1/2	49	+ 3 1/2
....	....	31	28 1/2	$25	MacMillan Petrol.....	.....	.....	.....	.....	.....	.....
2 7/8	1/4	1/2	1/4	1	Magdalena Synd.....	4,200	3/8	1/2	3/8	3/8	0
38 1/2	14	16	12	N.P.	Margay Oil.....	.....	.....	.....	.....	.....	.....
6 3/8	2 1/4	7 1/2	2	N.P.	Mexico Ohio Oil.....	800	3 1/4	3 1/4	3 1/4	3 1/4	0
....	....	11 7/8	7 7/8	N.P.	Middle States A.v.t.c.	19,200	8 7/8	9 5/8	†7 7/8	9 5/8	+ 1 1/8
....	....	6	4 1/8	N.P.	do Class B v.t.c.	9,800	4 1/4	4 3/4	†4 1/8	4 1/2	— 3/8
42	8	32	18 7/8	5	Missouri-Kansas P.L.	92,100	30 3/4	*32	30	32	+ 1/2
1 1/2	1/4	3/4	1/2	1	Mountain & Gulf Oil..	1,400	5/8	5/8	5/8	5/8	0
22 7/8	7	12 1/8	8	10	Mountain Producers..	2,100	10 3/4	10 7/8	10 1/8	10 7/8	+ 5/8
43 7/8	24	36 3/4	25 1/8	N.P.	Nat. Fuel Gas.....	4,100	32	34 1/8	30 3/4	34 1/8	+ 3 5/8
5	2 1/4	3 1/2	2 1/2	$5	New Bradford Oil....	500	2 3/4	2 3/4	2 5/8	2 3/4	— 1/4
4 3/4	3 1/8	3 1/8	3	10	New England Fuel...	.....	.....	.....	.....	.....	.....
24 1/2	11 1/8	16 7/8	10 1/8	25	N. Y. Pet. Royalty..	.....	.....	.....	.....	.....	.....
18 1/2	6 1/8	11 1/4	6 7/8	N.P.	North Central †Texas	200	9 1/4	9 1/8	9	9	— 1/4
19 1/4	8 1/8	11 5/8	8 1/8	N.P.	Oilstocks Ltd. A.....	1,200	10	10 1/8	9 7/8	10	— 1/8
18 1/4	8 1/2	11	8 1/2	N.P.	do B.....	.....	.....	.....	.....	.....	.....
26 5/8	12 1/8	19 1/2	12 1/2	N.P.	Pacific Western Oil...	1,500	16 1/4	16 7/8	16 1/8	16 1/4	— 1 1/2
3 1/2	1/2	2 1/2	1	N.P.	Pandem Oil.....	15,300	1 1/4	1 5/8	1 1/4	1 5/8	— 1/8
10 1/2	2 1/4	4 3/8	1 7/8	N.P.	Pantepec Oil.....	1,800	2 1/8	3	2 5/8	2 5/8	— 3/8
25 1/2	13 1/8	13 1/8	13 1/8	$25	Paragon Refg. B. ctfs.	.....	.....	.....	.....	.....	.....
28	17	29	19 1/8	N.P.	Petroleum Corp.....	29,500	24 1/4	26 1/2	23 1/2	26	+ 2 3/8
....	....	5 7/8	4 1/4	....	do warrants.....	4,500	4 5/8	5 1/4	†4 1/4	5 1/4	+ 1/2
37	22	27 1/2	21 1/2	N.P.	Plymouth Oil	600	21 5/8	22 1/8	†21 1/2	22 1/8	+ 7/8
16	9	10	9	$5	Red Bank Oil.....	200	10	10	10	10	0
8 1/2	1 1/8	5 3/8	2 1/8	N.P.	Reiter-Foster Oil.....	2,100	3 5/8	3 7/8	3 5/8	3 7/8	— 1/8
25 1/4	19	23 1/2	21	25	Richfield Oil pfd.....	500	22	22	21 5/8	21 5/8	+ 5/8
29	13	18 1/8	15	N.P.	Root Refining pr. pfd.	100	17	17	17	17	— 1 1/2
11	3	8 1/2	3 5/8	N.P.	Ryan Consolidated...	200	5 3/8	*8 1/2	5 3/8	8 1/2	+ 3 1/4
5 7/8	1 7/8	2 1/2	2	10	Salt Creek Consol.....	200	2	2	2	2	0
25 7/8	9	15 1/4	10	10	Salt Creek Producers	1,200	12 3/8	13	11 1/2	12 1/2	— 1/2
33 3/8	10	....	....	25	Shreveport El Dorado	.....	.....	.....	.....	.....	.....
....	....	39 1/8	39	25	Signal Oil & Gas A..	.....	.....	.....	.....	.....	.....
24	9	17	9	N.P.	Southland Royalty..	3,400	12 7/8	14 3/8	12 1/2	13 1/2	+ 3/8
12	4	10	5 1/2	5	Sunray Oil.....	4,100	7	7 5/8	6 7/8	7 1/4	+ 1/4
23	7 1/8	14 1/4	8 3/8	N.P.	Texon Oil & Land...	1,000	10 1/4	10 5/8	10 1/4	10 5/8	— 1/8
81 1/8	8 7/8	16	8	10	Venezuela Mexico....	100	10 5/8	10 5/8	10 5/8	10 5/8	+ 1 3/4
6 1/2	1 1/8	4 1/2	2 1/4	5	Venezuela Petroleum.	5,500	3	3 1/8	2 7/8	3	— 1/8
9 1/8	2	4 3/4	2	1	Woodley Petroleum..	900	3 1/2	4 3/8	3 1/2	4 3/8	+ 1/2
5 3/8	1/4	2 1/2	1/2	N.P.	Y Oil & Gas.....	1,100	1 1/4	1 5/8	1 1/8	1 1/2	— 1/4

*New High †New Low

New York Bonds

Week Ending May 9

	High	Low	Last	Change
Assoc. Oil gold 6s.....	102 1/2	102 1/2	102 1/2	0
Atlantic Refg. deb. 5s...	102 1/4	101 3/4	102	+ 1/4
Cal. Pet. 5s.....	100	99 1/4	100	0
Cal. Pet. 5 1/2s.....	102 1/4	101 7/8	102 1/4	+ 1/4
General Pet. 5s.....	102	101 3/8	101 3/8	— 3/8
Humble Oil & Refg. 5s..	102	101 1/4	101 1/2	— 1/8
Humble Oil & Refg. 5 1/2s	102	101 7/8	102	0
Pan Amer. P & T 7s.....	99 1/2	99 1/2	99 1/2	—5 1/4
Pan Amer. P & T 6s.....	104 1/2	104	104 1/2	+1 1/2
Pan Amer. P & T 6s.....	97 1/2	97	97 1/2	0
Phillips Pet. 5 1/4s.....	97	96	96 3/8	+ 5/8
Pierce Oil deb. 8s.....	105 1/2	105 1/2	105 1/2	0
Pure Oil 5 1/2s.....	100 1/2	99 3/4	100 1/2	+ 1/2
Richfield Oil Calif. 6....	96	95 3/4	96	+ 1/4
Shell Union Oil 5s.....	97 1/4	96	97	— 3/8
Shell Union Oil 5s with war.	101	100 1/2	101	+ 1/4
Sinclair Con. Oil 7s.....	104	103	103 5/8	0
Sinclair Con. Oil 6 1/2s...	102 1/2	102	102 1/2	— 1/8
Sinclair Con. Oil 6s D...	100 5/8	100 3/8	100 1/2	— 1/8
Sinclair Con. Crude 5 1/2s	100 1/4	99 3/4	100 1/4	+ 1/4
Sinclair Pipeline.....	98 1/2	98	98	— 1/4
Skelly Oil 5 1/2s.....	96 3/4	96	96 3/4	+ 1/8
S. O. N. J. 5s.....	103 1/2	102 3/4	103 1/2	+ 1/4
S. O. N. Y. 4 1/2s.....	91	97 3/8	97 3/4	+ 1/4
Union Oil of Calif. 6s A..	108 1/4	108	108	— 1/4
Union Oil of Calif. 1st 5s A	101 3/4	101 3/4	101 3/4	0
Union Oil of Calif. 5s C..	100	99 3/4	100	0
Warner-Quinlan 6s.....	92 1/2	90 3/4	92 1/2	+ 7/8
White Eagle Oil 5 1/2s...	106 1/2	106	106 1/8	0

New York Curb Bonds

Week Ending May 9

	High	Low	Last	Change
Cities Serv. 5s '66.....	86	8 1/4	85 1/4	— 3/4
Cities Serv. G. 5 1/2s '42..	87 3/4	87	87 1/2	— 3/8
Cities Serv. G. P. 6s '43..	93	93	93	0
Cont. Oil 5 1/4s '37.....	96	95 3/4	96	0
Empire O & R 5 1/2s '42..	87 1/4	86 3/4	87 1/4	0
Gulf Oil 5s '37.....	101 3/4	101	101 1/4	— 1/2
Gulf Oil 5s '47.....	103 1/2	102	102	—1 1/2
Indep. Oil 6s '39.....	105 1/2	104 1/2	105 1/2	+ 1/2
Pure Oil 5 1/2s '40.....	99	97 5/8	98 5/8	+ 5/8
Sun Oil 5 1/2s '39.....	102	100 3/4	102	0
Union Oil Calif. 5s '45...	100	99 1/2	100	+ 3/8
Valvoline Oil 7s '37.....	103 1/4	103	103	— 1/4

Oil Dividends

	Amount	Payable	Stock of Record
Imperial Oil q.	12 1/2c	June 2	May 15
Penn. Mex. Fuel	$1	May 20	May 12
Simms Petroleum q...	40c	June 14	May 29
S. O. Indiana q.	62 1/2c	June 16	May 16
S. O. Nebraska q.	62 1/2c	June 20	May 24
do extra	25c	June 20	May 24
Vacuum Oil q.	$1	June 20	May 31